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DST-1810S-202-78

DEFENSE INTELLIGENCE AGENCY

PARAPHYSICS R&D—WARSAW PACT (U)

PREPARED BY
U.S. AIR FORCE
AIR FORCE SYSTEMS COMMAND
FOREIGN TECHNOLOGY DIVISION

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PARAPHYSICS R&D—WARSAW PACT (U)

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DST-1810S-202-78

DIA TASK NO. PT-1810-18-76

DATE OF PUBLICATION
30 MARCH 1978

Information Cutoff Date
1 October 1977

This is a Department of Defense Intelligence Document prepared by the Foreign Technology Division, Air Force Systems Command and approved by the Directorate for Scientific and Technical Intelligence of the Defense Intelligence Agency.

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"I did the best I could, let those who can do better."

L. L. Vasil'yev, 1961

PREFACE

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(U) Constructive criticism, comments or suggestions are encouraged and should be forwarded to the Defense Intelligence Agency (ATTN: DT-1), Washington, D. C. 20301.

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EXECUTIVE SUMMARY

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2. Research Trends/Achievements (U)

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SECTION I

INTRODUCTION (U)

1. Terminology (U)

(U) Paraphysics generally refers to the investigation of unusual (paranormal) mental functioning and includes a variety of conditions or interactions that may be directly or indirectly related to such functioning. For example, unusual or unexplainable mental processes would include telepathy; unusual interactions would include certain sensitivities (e.g., to subtle electromagnetic fields) or unusual dynamic influences (e.g., psychokinesis). Paraphysics includes other research involving infrequently studied or unusual physical or biological interactions if such research has the potential to assist in understanding paranormal mental functioning. Some aspects of paraphysics may even overlap into biophysics. A main thrust of the various paraphysics research is to try to explain paranormal phenomena in the context of known physical mechanisms and to pursue particular applications.

(U) Other terms that relate, in part, to paraphysics are psychic research and parapsychology. However, this research has usually been concerned with statistical, psychological, and physiological aspects and has not necessarily investigated biological or physical interactions that could explain such phenomena.

(U) Recently, a Soviet term, "psychoenergetics," has been gaining popularity. This refers to the study of informational and energetic processes associated with paranormal mental functioning. Soviet researchers had previously introduced terms such as bioinformation (e.g., telepathy) and bioenergetics (e.g., psychokinesis) to describe some paranormal phenomena. Another term used by Warsaw Pact researchers is psychotronics; this is similar in meaning to psychoenergetics but is intended to emphasize instrumentation aspects.

(U) These recent terms include and expand upon investigation previously listed under other labels, and tend to lessen or avoid adverse views sometimes associated with the older terminology. This appears to be a central concern in the USSR where such research in the past has had mystical or occult implications that definitely conflicted with Marxist doctrine.

(U) An older term commonly used in relation to such phenomena is extrasensory perception (ESP), which includes telepathy and clairvoyance. Telepathy refers to apparent mind-mind communication ability without known sensory means; clairvoyance refers to apparent mental ability to obtain information without known sensory means and without mediation through other people. These categories are very difficult to differentiate, and many researchers currently refer to them as "general ESP" (GESP) without attempting to distinguish the particular mode. Another general term in current use is "remote viewing" which is similar to general ESP but usually refers to a specific ability (i.e., describing remote geographic locations). An older term in general use is psychokinesis (PK), which refers to apparent mental influencing of configuration or motion of material objects. Certain mental states also appear to influence material properties or biological processes (in people and organisms) and seem to have elements of ESP or psychokinesis. These apparent interactions are also considered part of paraphysics or psychoenergetics research.

2. Scope (U)

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SECTION II

SPECIFIC INVESTIGATIONS (USSR) (U)

(U) In this section, USSR paraphysics research that relates to paranormal mental processes is reviewed. This includes research on information processes (telepathy, clairvoyance, bioinformation) and energetic processes (psychokinesis, bioenergetics). The data available are very limited and have been reported by only a few researchers. Due to the relative diversity of each researcher's interests and research approach, it is convenient to organize this section according to researcher, rather than specific research topics. The most credible data available at this time are from I. M. Kogan and G. A. Sergeyev; their reported data are reviewed first.

(U) Most of these data, however, are difficult to adequately evaluate. Usually, sufficient information on experimental procedure is not clear, or the number of experiments reported is very small. Data from the established researchers are considered more likely to be reliable than that from others. Data from other researchers of lesser involvement or credibility are also presented if the research appears to have some potential significance.

(U) Research on similar topics for other Warsaw Pact countries is summarized in Section III.

1. Information Processes (U)

a. I. M. Kogan (U)

(U) Of all the data available, Kogan's experiments, which began in 1965, appear to be the best documented and controlled.

(U) Kogan's emphasis is on information theory aspects of telepathy, and his initial theoretical goal was to show that electromagnetic theory is not necessarily incompatible with apparent telepathic phenomena. During 1966-1970, he published results of some of his successful experiments in the USSR technical journal *Radio Engineering*. In 1969, some of the results were summarized in a paper, "The Information Aspects of Telepathy," for a symposium on ESP at UCLA. Although he has released no data since 1970, he is definitely known to be still involved in extensive research and experimentation.

(U) The types of experiments reported by Kogan include short-distance telepathic suggestion of "mental orders" and transmission (or perception) of single digits, and short- and long-distance telepathic transmission (or perception) of simple objects.

(U) The early short-distance experiments may have been performed to verify some of the research conducted by L. L. Vasil'yev* in the 1920's and 1930's and used a hypnotic state as well as normal consciousness. Some experiments were also conducted in shielded rooms. Kogan was sufficiently satisfied that the results were far greater than expected by chance and that further research was warranted. For example, in one experiment involving selection of one of ten cards numbered one through ten, with "inductor" (sender) in a separate room, the "percipient" (subject, or receiver) selected 13 correct cards in 26 attempts (probability around 10^{-6}). The hypnotic state experiments, which involved the well-known Moscow medical hypnotist V. L. Raikov, were limited to study of correlations between time of waking intent by the sender and the actual waking of a hypnotized subject. Kogan states the results to be far greater then chance occurrences. However, Kogan appears to have abandoned further studies involving the hypnotic state and has instead selected individuals with natural abilities in the conscious state for further experimentation.

*(U) Vasil'yev also appears as Vasiliev in the literature.

(U) Most short-distance experiments and the long-distance experiments involved attempts to "transmit" images of specific objects that were unknown to the percipient. Kogan observed that in such experiments the exact image, particularly of complex shapes, was not generally perceived. Instead, general attributes of the intended target were described. Kogan, therefore, developed an index for evaluating the percipients' descriptions. This index included target attributes such as sensation or general feature (color, shape), action, or emotion. The description of the percipient would then be evaluated and matched, if possible, to one of the target objects. A typical experiment would have six objects selected at random from a large target pool by a commission of several individuals acting as a control and evaluation group. One of the long-distance experiments was also of the Zener card variety (similar to J. B. Rhine's approach at Duke University), and yielded 12 of 25 correlations. The probability for such a result is about 10^{-3}. There is no indication Kogan pursued this form of experimentation any further.

(U) Kogan's long-distance experiments have been between Moscow and Leningrad, Moscow and Novosibirsk, and Moscow and Tomsk. In each of these experiments, the percipient's description could be matched correctly to three or four of the six intended targets.

(U) Kogan also demonstrated a basic communication application in one of the Moscow-Novosibirsk experiments. Two simple but contrasting objects were chosen to represent the Morse code; a three-letter word was then selected (unknown to percipient) and the appropriate series of "dots" and "dashes" were identified for this word. The percipient (in Novosibirsk) subsequently identified the correct sequence of target objects (and therefore Morse code symbols), and the intended three-letter word could be reconstructed. However, this procedure required considerable redundancy and was very time consuming. It is doubtful that Kogan has pursued additional experiments of this type.

(U) Perhaps the most meaningful experiment in terms of ease of evaluation and apparent potential in a communication mode was performed in 1967. This involved attempts at transmission of randomly selected digits between 0 and 9. Distance between "sender" and "receiver" was varied from several meters to several kilometers. Reported results, as attested to by at least five members of the All-Union Technical Society of Radio Technology and Communications imeni A. S. Popov (the Popov Society), indicates 105 of 135 numbers were described (received) correctly by the receiver. The article states this to be 78% correct; however, this is a significant understatement since it does not reflect the overall probability of such an occurrence. In fact, in terms of probability, this would have to qualify as the most statistically significant result ever reported in psychic research literature; the probability of duplication via random occurrence would be about 10^{-77}.

(U) It also appears that with planned redundancy, a similar approach could yield highly reliable results, perhaps sufficient for certain application attempts. For example, each of the numbers 0-9 could correlate to specific instructions or messages, and in this way basic "messages" could be transmitted to or received from remote locations (space, submarine, etc.). Kogan has made frequent reference to such applications and very likely considers them to be reasonable objectives.

(U) Kogan apparently has been using some type of screening test since 1965 for selecting gifted people. Subjects most often associated with his experiments apparently exhibit vivid internal imagery in a conscious state, enabling experimentation without the need for special techniques (such as hypnosis). Kogan shows no serious interest in the traditional card guessing experiments or usual statistical methods. He appears to be mainly concerned with experiments involving people who have already demonstrated a high degree of paranormal ability, and he is very likely seeking a degree of repeatability suitable for reliable applications.

(U) Kogan may also be investigating the possibility of a person other than the intended receiver to perceive the target objects. In the 1967 Moscow-Leningrad experiment, a second receiver, in Leningrad, did describe very accurately the target intended by the sender in Moscow. It is not known, however, if the sender was aware of the additional person involved in the experiment. However, this

type of experiment has probably been repeated by Kogan, perhaps with additional receivers not known to the sender, or with receivers attempting to obtain information from a person without his knowledge (i.e., an unwitting "sender"). Kogan is also known to be experimenting with "targets" concealed in metal containers, although results are not known. Such experiments could have intelligence application potential, although extent of such involvement, or interest, by Kogan is unknown.

b. G. A. Sergeyev (U)

(U) G. A. Sergeyev, at the Ukhtomskii Physiological Institute in Leningrad, has published a few experimental results on telepathic investigations. In one of these experiments he claims to have observed a synchronization of certain electroencephalogram (EEG) patterns between sender and receiver when the sender was observing flashing lights (different frequency for each eye). The EEG pattern in the intended receiver was apparently unique enough for easy recognition and could be utilized in a "code" sense. A long-distance experiment (Leningrad-Moscow) was subsequently conducted with the duration of flashing lights shown to the sender in Moscow to be either 15 seconds or 45 seconds. The short period corresponded to a Morse code "dot"; the long period, to a "dash." Sergeyev claims to have correctly identified the intended word with this technique from EEG pattern variations in the receiver. Sergeyev also claims to have used a similar approach to send a coded word with the sender simulating unpleasant emotions for fixed periods, instead of viewing flashing lights. It appears Sergeyev worked with the same people as Kogan when Kogan performed his Moscow-Leningrad experiments. However, they have not cross-referenced the joint nature of this long-distance experiment.

(U) Although his telepathic-type experiments are difficult to evaluate, there may be some degree of validity to them. Other researchers, in the US and Canada, have also noted the possibility of correlations in EEG patterns between sender and receiver in telepathic experiments under certain conditions.

c. Other Investigators (U)

(U) There are other researchers in the USSR that conduct investigations into topics directly or indirectly related to psychic perception. Most of these investigators appear to pursue their work on a part-time basis and are probably not associated with any formalized laboratory program. However, some of their techniques or results could certainly be of interest to those in official research positions, particularly if the data were considered significant and the experiment repeatable.

(U) The investigations reported by Larissa V. Vilenskaya are an example. She has been conducting research with E. K. Naumov (who is not currently active) and now appears to be involved with a variety of her own investigations. One aspect is her study of a phenomena initially referred to as "skin vision" or, more recently, "dermo-optics." This relates to an apparent ability of some people to identify colors of concealed "targets" simply by touching the opaque outer covering. Although initial experiments on dermo-optic phenomena were open to severe criticism mainly due to lack of proper experimental control, later experiments appear to have overcome some of these criticisms.

(U) In one recent experimental series, a subject with apparent psychic ability identified the correct target color in 113 out of 200 trials (probability of 10^{-21}). There were four color card possibilities, with 50 correlations being chance level. In a similar series, the subject was a few meters from the concealed target and identified the correct target color 77 out of 200 trials (probability of 10^{-5}). Additional experiments were conducted with the subject attempting to describe various undisclosed objects that were placed in opaque containers. The descriptions given were in close correlation to the target object. Other experiments, such as locating concealed magnets, were also reported to be successful. However, sufficient data are not reported to permit thorough evaluation of these particular experiments.

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(U) A variation to this type of experimentation involved an application of this apparent paranormal ability in a communication mode. Eight experiments were conducted where the target colors were designated to represent a dot or a dash, in order to evaluate the possibility of simple Morse code type "transmission." Three-letter words were correlated to the color targets and six of the eight words were reported to be received correctly. Each word was attempted three to five times since redundancy had been observed to improve reliability. The subject was located several meters from the concealed color targets. The experimenters concluded that this method with trained and motivated subjects could be applied in transmitting information over long distances.

(U) The experimenters also conclude that this type of apparent paranormal perception may be related to a mode commonly referred to as clairvoyance. I. M. Kogan has also referred to "dermo-optics" as very likely being a form of general ESP, probably clairvoyance. This explanation is supported by reports of some subjects having the ability to describe not only the intended color of the concealed target, but also the specific shapes that were drawn on the color card targets.

(U) Apparently, considerable research on "dermo-optics" also occurs in the USSR with the objective of improving tactile reading ability of people who are blind.

(U) Vilenskaya initially used hypnotized people as subjects. Later she found hypnosis was not necessary and eventually chose people who appeared to have a natural aptitude and who could develop their abilities through practice. She apparently uses an ESP testing device, perhaps for identifying people with psychic aptitude as well as training. This device appears similar to one described by a US researcher at the University of California, which is based on selection of several possible targets via electronically generated random processes. She also appears to experiment with psychic perception in various altered states of consciousness (such as dream states).

(U) Additional reports on possible psychic perception investigations involve S. V. Speransky's experiments with mice at the Novosibirsk Medical Institute. Behavior of a normal well-fed group of mice was similar to that noted in an isolated group that was starved. Initially, both groups had been together for a considerable time. There was no similar activity in a nearby control group of mice that had been selected from a different set. Speransky apparently plans to continue such investigations, since he suspects there is a telepathic basis for the noted correlations. Kogan is also interested in experiments with animals, though it is not known if he has conducted any.

d. Indications of Recent Research Interest (U).

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2. Energetic Processes (U)

(U) The most unusual psychoenergetic phenomena is the apparent ability of certain individuals to influence matter via mental volition. A form of energy transfer, which appears to be generated or regulated by mental activity, may be the basic source for such effects. The nature of this energy transfer and its interaction mechanism is being investigated by various researchers throughout the world. The process involving apparent interaction with inanimate material is usually referred to as psychokinesis and is associated with unexplainable motion or configuration changes. This term is somewhat limited in that it does not generally include all unusual "energetic processes."

(U) There are unexplained phenomena that suggest changes in other material properties (e.g., electric, magnetic) may also occur during psychoenergetic experiences or experiments. Other unusual phenomena have been noted that appear to affect people. Some of these appear to involve physiological parameters; others may be psychosomatic in nature. The most controversial of these would be the apparent phenomena referred to as "psychic healing" (or variants). Researchers consider some of these effects to be possibly explainable by generation or interaction of various naturally occurring "fields," or by some type of telepathic influence on the self-regulation system of the other person.

(U) The popular press in recent years has carried many accounts of a rather spectacular type of psychokinesis; this has been referred to as the "Geller effect," named after the Israeli, Uri Geller. Unfortunately, these accounts of metal deformation or breaking have been difficult to verify, and due to his sometime apparent attempts at deception, no firm conclusions can be made. At least one physics laboratory (Kings College, London, England) has studied Geller and others who claim similar ability,* and has released confirming reports. Some of the experimental information reported appears suspect and this apparent controlled study should be treated cautiously. Another physics laboratory has studied fracture patterns of material alledgedly "broken" by Geller. Their conclusion is that the cause of these fractures was not mechanical in nature, nor a result of usual methods of fracture. This would tend to suggest unusual interactions did indeed occur and that this form of psychokinesis should be open to further study. However, there are no data to indicate Warsaw Pact countries have investigated this specific type of psychokinesis. The few energetic-type investigations reported appear to be of a "field effect" type; unusual low energetic level dynamic effects have been reported, and unusual interactions with other people or biological specimens have been reported.

a. G. A. Sergeyev (U)

(U) Although open criticism of people who have given apparent psychokinetic demonstrations has frequently occurred in the USSR, a few investigators have nevertheless studied such individuals under informal conditions and in a laboratory environment. G. A. Sergeyev is known to have studied Nina Kulagina,** a well-known psychic from Leningrad. Although no detailed results are available, Sergeyev's inferences are that she was successful in repeating psychokinetic phenomena under controlled conditions. G. A. Sergeyev is well-respected researcher and has been active in paraphysics research since the early 1960's.

*(U) Research is also under way in Paris with J. P. Giraud, who has similar ability as Geller.
**(U) Also known as Nelia Mikhailova.

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(U) Sergeyev has also studied characteristics of normal and diseased tissues, and for some specimens, he notes differences in their emission spectrum. He claims people who have a "healing" ability can influence diseased tissue in a way that the emission spectrum returns to its original characteristics, and resumption of normal tissue functioning occurs. Although Sergeyev includes no data to prove this contention, he does appear to have performed considerable work along these directions. Sergeyev has also reported data on the apparent ability of a healer to influence the emission spectrum of ordinary water. He suspects that this involves similar principles to those noted in reaction with living tissue or cells. He considers these interactions to be the basis, in part, for certain people to apparently influence states of health, including accelerated recovery, of others.

(U) Unfortunately, his reports do not contain sufficient data for conclusive evaluation; he does not define what spectrum band he is reporting, nor does he report on any form of control experiment.

(U) It is interesting to note that Sergeyev is actively doing research on "healers," as well as on people with psychokinetic ability of the type demonstrated by Nina Kulagina. His experiments include instrumentation to study electromagnetic influences during healing activities, similar to those already reported for experiments with Nina Kulagina.

(U) Sergeyev has also investigated psychoenergetic effects of people with psychokinetic abilities (i.e., N. Kulagina) on other people and on biological specimens. In one experimental series, frog hearts were placed in an appropriate solution, and Kulagina attempted to influence their activity. Sergeyev claims that normally frog hearts remain active in solution up to 1.5-2 hours after removal from the frog. In the first of the experiments the electrocardiogram (EKG) indicated activity ceased about 7 minutes after Kulagina began concentration on "stopping the heart." The heart had been in a ceramic container. In the second experiment, with the heart in a metallic container, heart activity ceased after 22 minutes. In both these experiments, Kulagina was 1.5 meters from the "target" hearts.

(U) Sergeyev measured weak electric and magnetic fields at the target heart that correlated with some of Kulagina's physiological activity. This may have been responsible for the effect noted on heart activity.

(U) In another experiment, Kulagina attempted to increase the heart rate of a skeptical physician. Electroencephalogram, electrocardiogram, and other parameters were measured in both. Abrupt changes in these parameters were noted in both people within 1 minute after the experiment began. After 5 minutes, Sergeyev judged the heart activity of the physician had reached dangerous levels, and the experiment was terminated. Subsequent analysis indicated a definite synchronous effect was noted between certain heart parameters for both the physician and Kulagina. Sergeyev apparently views psychokinetic-type phenomena as being closely related to healing-type phenomena and apparently has done (and is doing) considerable investigations in this direction.

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(U) This view is also held by researchers in England. They have also reported on physiological parameter synchronization effects between "healers" and another person. There are also other researchers investigating similar "healing" phenomena in the USSR. Well-known researchers are the Krivorotovs (at Tblisi); however, sufficient data are not available for definitive evaluation of their claims.

(U) Such investigations are certainly unique and are worthy of further attention. Sergeyev's research could have considerable impact on theoretical, as well as practical, aspects of these types of energetic processes. It could improve understanding of other energetic processes and also paranormal information processes.

b. V. G. Adamenko (U)

(U) Another person reported to have been studied by several USSR researchers is Alla Vinogradova, * a Moscow resident. V. G. Adamenko, a Moscow physicist at the Institute of Physiology, has been the key investigator. His work appears to be credible and well controlled, although sufficient data are not available for final evaluation. As with Kulagina, Alla Vinogradova appears capable of causing small nearby objects to move in various specified directions. Adamenko claims to have measured small electric fields on the target objects during her acts of volition and has noted correlations in motion to intensity of motivation and to physiological conditions such as pulse rate. Another of his observations is that once an object has been initially affected by Vinogradova, others can cause motion in that object as well. In addition, he claims to have trained inexperienced people, via his feedback methods, to accomplish similar results.

SECTION III

HISTORICAL REVIEW (U)

1. USSR (U)

a. Prior to 1960 (U)

(U) Investigation of paranormal mental phenomena generally began during the latter part of the 1800's in various countries, including the Soviet Union. Initially, only a few independent researchers pursued such study, since paranormal phenomena were usually associated with superstition, mystical, or occult beliefs. Their intent was to find a scientific-based explanation for the purported phenomena, if true. Many of these studies involved collecting and evaluating naturally occurring "spontaneous cases" suggestive of unusual phenomena. Other investigations examined claims of people with unusual abilities; however, many such people were also known to fake the alleged phenomena, thereby discrediting cases when the phenomena may have been legitimate. Some of these investigations included phenomena associated with hypnotism, which was another highly controversial issue. Study in this area was further complicated by the tie at that time to psychology, another emerging field that was experiencing difficulties of its own.

(U) The first indication of specific USSR interest in investigations into paranormal phenomena from a scientific viewpoint was around 1875, several years before the first attempt at such study was formalized by establishment of the British Society of Psychical Research. This early USSR effort was initiated by D. I. Mendeleyev who submitted proposals for such study to the Physical Society of St. Petersburg (Leningrad) University. He also pursued his own private investigations and continued to urge that the topic in general should be examined on a thorough scientific basis. Several other USSR investigators also began study of paranormal phenomena around this time.

(U) One such investigator was N. G. Kotik, a physician whose book *Spontaneous Thought Transmission* appeared in 1912. Kotik's objective was to separate what he considered "natural phenomena" from mysticism and related topics. The Soviet public in general has always appeared to be open to mystical-type phenomena, an openness that was somewhat officially acknowledged by Czar Nicholas II and his family's association with the highly controversial Rasputin.

(U) After 1917, open interest in psychic type phenomena was greatly suppressed since Marxism was thought to definitely exclude anything associated with nonmaterialistic issues. On the other hand, the revolution also initially appeared to generate a desire for new knowledge even in unconventional directions.

(U) In 1919, V. M. Bekhterev, a noted physiologist at the Institute of Brain Research of the University of Leningrad, began investigations into unusual psychological and physiological effects associated with the hypnotic state, including cases of apparent telepathic experiences. Pavlov had also made reference to unusual abilities sometimes observed in animals and man and was open to such investigations. Bekhterev organized a special group (Commission for the Study of Mental Suggestion) to continue and elaborate on his early work. L. L. Vasil'yev, a research physiologist who joined this institute in 1921, was part of this commission. Vasil'yev's initial work was on effects of magnetic fields on psychological states; eventually he became the prime researcher in the area termed "mental suggestion."

(U) In addition to laboratory experiments with hypnotized people, Vasil'yev also began to collect and evaluate naturally occurring incidents (i.e., spontaneous cases) that were suggestive of telepathic processes. He also established contact with researchers in other countries, particularly with the noted French physiologist, Charles Richet, who also conducted psychic experiments with hypnotized people.

(U) In 1926 Vasil'yev published results of this early research and postulated electromagnetic radiation from the brain as a possible explanation. In the same year a special board was established at the Brain Research Institute to duplicate his findings, but its study did not yield definite results. However, later experiments with a different test person (subject) were stated to be positive and supportive of Vasil'yev's initial observations.

(U) After Bekhterev's death in 1927, little work on telepathy studies occurred. This may have been due to some ambiguous results or possibly to the negative viewpoint on telepathy by the Institute's new director.

(U) In 1932 the Institute was given an assignment to initiate an experimental study of telepathy with the aim of determining, if possible, a physical basis for its explanation. Vasil'yev was selected to direct this investigation. This work continued until 1938 when World War II interrupted activities. After that, Vasil'yev continued to collect evidence of spontaneous cases and pursued unofficial investigations on his own.

(U) The main orientation of his research during this period was on telepathic induction of specific motor acts, on transmission of visual images from one person (sender) to another (receiver), and remotely induce sleep or awakening in a hypnotized subject. His initial subjects were easily suggestible or hypnotizable hysteric or neurasthenic patients. Later, Vasil'yev found certain normal people appeared to have repeatable psychic aptitude without being hypnotized.

(U) Some of these experiments involved attempts at transmission of black or white targets and also specific drawings. Vasil'yev found a few cases where results were far greater than chance expectancy (10^{-7}), and he also reported data showing high correlation between some of the complex drawings used as targets.

(U) His most famous was the long distance experiment between Leningrad and Sevastopol' (1,700 km) which involved "sending" sleep and awake commands to a subject who had been involved in similar experiments at short distances. The sender selected the time for both the sleep and the subsequent awake command at random during a preselected 2-hour period. The experiment was performed on 2 days, with the first being a null test (i.e., no commands intended) unknown to the subject. In this case, no response was noted in the subject. In the second experiment, the subject responded within 1 minute to both sleep and awake commands. This was consistent with numerous previous short-distance experiments and was considered to at least demonstrate the potential for long-distance mental "influence," or telepathy.

(U) Vasil'yev's experiments have the same evaluation difficulties as most similar experiments. Sufficient detail on experimental protocol and test procedures is usually not available, and usually a sufficient number of experiments are not conducted. However, these early experiments were apparently sufficiently encouraging to at least help motivate later USSR researchers toward further investigations.

(U) Since Vasil'yev was also trying to explore the validity of electromagnetic models for explaining telepathic processes, much of his later work was with subjects in an electromagnetically shielded room (Faraday cage) and with "senders" located elsewhere. His data indicated there was little or no difference between results with subjects in or out of the shielded room. This led him to conclude telepathy may not be an electromagnetic phenomena. He later modified this view when it was realized usual shielding does not significantly affect the low-frequency portion of the spectrum and that telepathy could at least in principle still be related to known physical phenomena. It is clear Vasil'yev and other Soviet researchers were highly desirous to at least find hints of an electromagnetic connection; they apparently needed a clear link to known (or materialistic) concepts to justify such research in view of Marxist ideology. Lack of apparent electromagnetic correlation may have been a key factor for his discontinuation of formal experiments in 1938. Stalin had already begun his purges of anyone who appeared to advocate any antimaterialistic or antipolitical activity or belief.

(U) There were other researchers at this time (B. B. Kazhinskiy and S. Y. Turlygin) in Moscow who thought they had found differences between experiments in shielded and nonshielded rooms. However, the quality of these experiments is open to question.

(U) Earlier (1924) a Moscow physicist, V. Arkad'yev, concluded that electrical activity in the brain (cortex level) was of insufficient intensity to be effective at a distance. These results conflicted with Vasil'yev's findings. Theoretical attacks from this direction may also have caused Vasil'yev and others to withdraw from any open experimentation.

(U) In 1956, Vasil'yev began corresponding with the French researcher, R. Warcollier, and apparently received updates on worldwide parapsychological studies. Subsequently, he wrote a book for the popular press, ***Mysterious Phenomena of the Human Psyche***, which was published in 1959 in Moscow. This book discussed a variety of subliminal sensory influences from known Pavlovian concepts. Vasil'yev extrapolated some of these to account for possible telepathic phenomena (with the cortex of the brain viewed as an electromagnetic signal generator) and emphasized the view that paranormal abilities in general would eventually be explained on a purely physical basis. This modified approach, emphasizing "yet-to-be-discovered" physical explanations, apparently was necessary to avoid Marxist ideological conflict as well as to gain interest and support of scientists in conventional disciplines.

(U) Appearance of this book made a considerable impact in the USSR, and particularly with parapsychological researchers elsewhere who were shocked to learn that any interest in psychic research existed at all in the Soviet Union. In 1962, Vasil'yev published more details of his early experimental work in ***Long Range Suggestion*** and ***Experiments in Distant Influence***.

(U) These first publications apparently caused other unknown USSR researchers to publish articles and books. One such researcher was B. B. Kazhinskiy, an electrical engineer, whose book ***Biological Radio Communication*** appeared in 1962. The surfacing of paranormal phenomena issues in the open press appeared to be one of Vasil'yev's aims; in this he was certainly very successful.

(U) Ironically, the most significant event that assisted in bringing paranormal phenomena into the open was a French magazine article in 1959. This article described an alleged successful telepathic experiment between a Nautilus crew member at sea and an experimenter on shore. This experiment was eventually revealed as a hoax; however, its appearance at this time certainly helped call attention to Vasil'yev's early work and suggested that the apparent telepathic phenomena had definite military potential.

(U) Subsequently, Vasil'yev, then head of the Physiology Department at the University of Leningrad, was appointed as director of a new laboratory in the Physiological department to study telepathy on an official basis. Vasil'yev also devoted much time to making presentations on his work and parapsychology research in general to many scientific groups, laboratories, and institutes in Leningrad and Moscow.

b. 1960-1970 (U)

(U) Shortly after Vasil'yev's first publication, the issue of telepathy became hotly debated by many in the Soviet Union. Some chose to attack the protocol of Vasil'yev's experiments; some attacked such phenomena as contradictory to either Marxist theory or scientific principles, while others felt the phenomena did not contradict either Marx or science.

(U) There also appeared numerous reports in the popular press on apparent replication of some of Vasil'yev's experiments. Anecdotal literature appeared regarding accomplishments of well-known public figures who were purported to have unusual abilities (such as Wolf Messing). Many prominent individuals considered the subject was at least worthy of further study and should not be

ignored even from a purely scientific basis. If nothing more, in their view, such study could provide a firm basis for rebuking those who claimed such abilities. In sum, there were both attacks and acclaims for such research. Vasil'yev also began disseminating research results from other countries to help generate a variety of new research interest.

(U) In his presentations, he often quoted the views of the well-known USSR missile pioneer, K. E. Tsiolkovskiy, who suspected the reality of telepathic phenomena, felt it should be investigated, and saw its potential in future space travel. No doubt this view, in light of the Sputnik success in 1957, assisted in achieving an openness toward his research in many conventional circles. Vasil'yev was also known to have opened some public lectures by referring to Upton Sinclair's popular book (*Mental Radio*; 1930). This book discusses telepathic experiments that were witnessed by Albert Einstein who also felt the subject worthy of scientific study.

(U) Vasil'yev continued with his laboratory association until his death in 1966. P. I. Gulyaev succeeded him but has apparently emphasized other investigations involving various biological interactions not necessarily related to telepathic issues.

(U) In addition to the work at Vasil'yev's laboratory, research was also initiated in the Ukhtomskiy Physiology of Labor Laboratory, which is affiliated with Leningrad University. Initial researchers were G. A. Sergeyev, L. P. Pavlova, and E. K. Naumov. This laboratory had electroencephalogram (EEG) equipment and apparently other sensitive devices useful for detecting weak electric or magnetic fields. Such fields are suspected by some researchers to be associated with certain psychic events. D. G. Mirza, a psychiatrist, also showed interest and began research at this time, apparently as part of his normal responsibilities at the Institute for Problems of Information Transmission (IPPI), in Moscow.

(U) In 1965, I. M. Kogan, a Doctor of Technical Sciences at Moscow Higher Technical School (MVTU) imeni Bauman, was appointed as chairman of a special group to study problems of telepathy in affiliation with the Moscow section of the Popov Society. This group was called the Section of Bioinformation. E. K. Naumov was also involved in early phases of this group's activities.

(U) Kogan's stated objectives included study of telepathic phenomena (at both near and long distances) under controlled laboratory conditions, study of various techniques for enhancing telepathic phenomena, and collection and analysis of spontaneous phenomena reported worldwide. A goal of the group was also to establish a special laboratory with appropriate research equipment. Kogan also viewed telepathic phenomena as possibly explainable on an electromagnetic basis (i.e., in the extra-low frequency region) and much, if not all, of his work appears oriented toward this perspective.

(U) Between 1965 and 1970, Kogan's theoretical views and results of some of the Bioinformation section's experiments were published in the technical journal, *Radio Engineering*. It is difficult to fully evaluate most of his findings, mainly due to the small number of experimental trials reported. Also, experimental procedures and controls are not adequately reported in some cases. However, his results have passed the review of the Popov Society, and members of his group who serve as experiment monitors are qualified scientists.

(U) Another early research group was established in Moscow by E. K. Naumov, probably at the Polytechnical Musem, which he called the "Laboratory of Technical Parapsychology." Stated objectives were to study telepathy, psychokinesis, and psychoenergetics in general. Some specific objectives included potential application for long-distance transmission of messages, and the development of sensitive instruments for measuring electromagnetic or physiological parameters that might be associated with such phenomena. Naumov was also interested in behavior modification possibilities.

(U) However, it became apparent that Naumov's objectives were coming into increasing conflict with Kogan. Naumov may also have been too uncritical in his experiments, and postulated concepts or models for paranormal phenomena that Kogan felt were un-Marxist. In addition, Naumov became very active, gave numerous public appearances, and was very open to Western researchers. He was also known to associate with people of questionable political orientation and was openly critical of Kogan, accusing him of being too conservative. Kogan eventually began to break with Naumov, which may have contributed to Naumov's decline as a serious researcher. In 1974, Naumov was arrested by the KGB and sentenced for over a year to labor camp in Siberia. The official KGB charge against him was taking fees for a lecture he gave on parapsychology. Research he initiated was probably discontinued.

(U) Between 1965 and 1968 Kogan was also very active. He presented papers on his research at various technical society meetings and chaired symposiums on parapsychology. His last known appearance was in February 1968 when he chaired a session on "The Scientific Problem of Telepathy" in Moscow. After this, he ceased open activities and publications, although he is known to have continued his research efforts.

(U) In June 1968 Naumov also chaired a parapsychology conference in Moscow which was open to Western researchers. However, Pravda carried a very critical article on parapsychology, especially on alleged psychokinetic abilities. The basis for this criticism was centered on the showmanship aspects of some psychic subjects and on various explanations that seemed to challenge strict Marxism. Reference was also made to a telepathy experiment in May 1968 involving Kogan, Mirza, and others, which apparently failed. This experiment had been given much advance publicity by the popular magazine *Literary Gazette*. Publicity and resulting pressure were considered by the experimenters to be key reason for the failure and may have led to a more cautious attitude in publicity of all future activity. Kogan and his group, nevertheless, continued to express great confidence in the validity of earlier experiments that were judged successful. Kogan had previously indicated that his experiments do not work all the time, and that on the average only about one half of the experiments are considered successful.

(U) During this period, investigation was initiated in a wide variety of psychoenergetics topics throughout the USSR. Many of these were with small and unofficial groups, although some research also began at various laboratories. Kazak State University at Alma-Ata appears to have initiated several new research efforts. This research addressed many issues of the psychoenergetic process ranging from usual paranormal aspects to the study of biological interactions with natural or induced energy sources (i.e., electromagnetic fields, magnetic fields, laser interaction or stimulation, and others). The most active researcher at Alma-Ata, V. M. Inyushin, has had numerous interchanges with research groups in Leningrad, Moscow, and elsewhere. A large amount of material is available from these investigations; however, this generally is difficult to evaluate and does not directly relate to main paraphysics topics. Some of this work may contribute toward development of a more complete electromagnetic model for paranormal phenomena.

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c. 1970 to the Present (U)

(U) In 1970, a book by two journalists for the popular press was released in the US. This book, *Psychic Discoveries Behind the Iron Curtain*, was written in a highly sensational and exaggerated style and contained numerous factual errors. It received heavy criticism from serious US researchers, as well as being heavily criticized in the USSR. Naumov was frequently referenced and identified as being the source for much of the book's data, which did not help his already tarnished image. Although this book appeared to generate new interest in many countries, it had an overall

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negative influence in the USSR. Increased open criticism of parapsychology appeared, and publication of open research decreased. Naumov continued to hold conferences and, for a while, was instrumental in inviting foreign parapsychological researchers into the USSR to visit with USSR investigators. This activity ceased in 1974 with Naumov's arrest. Consequently, USSR research was no longer readily available, except for a few popular press articles.

(U) Although Naumov's international involvements ceased, some aspects were continued by a Czechoslovakian researcher, Z. Rejdak. In 1973, Rejdak organized the International Congress on Psychotronic Research. Emphasis in this organization was stated to be on all phases of psychoenergetic processes and was to focus on instrumentation aspects. This congress, or forum, has provided at least one avenue for some open research publication in lieu of Naumov's conferences and the popular press journals. Another publication avenue used frequently is the *International Journal of Paraphysics*, published in London. However, it appears most Soviet work published through these channels has been done by independent investigators and not necessarily those involved in careful research or with classified projects. Many of the papers appear to be very basic, mostly speculative, and are not well supported. However, these publications provide at least some insight into specific interests and potential directions for research in general.

(U) Despite the various open controversies, an article, "Parapsychology: Fiction or Reality?" appeared in 1973 in *Questions of Philosophy (Voprosy Filosofii)*, an official publication of the Soviet Academy of Pedagogical Sciences. Authors of this article were leading scientists who acknowledged the reality of some "so-called parapsychological phenomena," called for the removal of ignorance as to how the phenomena operates, and urged a multidisciplinary research approach in their investigation. This article also recommended that individuals with strong paranormal abilities be studied in scientific laboratories.

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(U) Although his open publications ceased in 1970, Kogan was suspected to be continuing paraphysics research. This was confirmed in 1974 when an interview appeared in the Moscow newspaper *Leninskoye Znamya*. In this article, he affirms his continuing study of the physical and theoretical nature of the telepathic process from a communication channel point-of-view. Kogan also affirmed continuation of long-distance experiments and research with animals, and indicated an interest in "telepathic transmission of emotions." The article implies he is actively screening the population for people who clearly show paranormal capabilities. He stated that a major goal of his section is to use telepathy for information transmission from or to remote locations or during certain emergency conditions. His reference to remote locations is consistent with goals expressed earlier (submarine or space locations). The reference to emergency conditions could refer to times when normal communication links are blacked-out or jammed (i.e., during nuclear attack).

(U) Although Kogan has openly expressed his concern about premature release of experimental data, and no doubt the effect of pressure on experiments due to excessive publicity became clear from the 1967 failure (Moscow-Kerch experiment), it is nevertheless unusual that Kogan would not have published since 1970. This lack of publication, in light of his on-going involvement in psychoenergetic research, is highly suggestive that aspects of his research are classified and that he may be receiving direct government support.

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2. Other Warsaw Pact Countries (U)

a. Czechoslovakia (U)

(U) In the early 1920's a Czech researcher, B. Kafka, began investigation into paranormal phenomena. He worked with hypnotized people, since he believed hypnotism was essential to heighten paranormal abilities. He claims to have trained and perfected clairvoyant abilities in people, and stated that his results were convincing. However, no clear data are available and his work cannot be evaluated. There are claims that he employed paranormal perceptional modes during both World War I and World War II for locating enemy troop positions.

(U) In 1950, Dr. M. Ryzl began serious research into paranormal perception from the point of view of developing this ability in ordinary people. He used hypnotic training and suggestion techniques, and found certain people's abilities did appear to improve with practice. In his research, Ryzl chose to keep target possibilities to one of two colors to permit easy and quantifiable evaluation of experimental results. This was accomplished by creating a large target pool of cards, with a uniform color on each side. These cards would then be sealed in lightproof envelopes, and randomized so that their orientation was unknown. The subject would then attempt to determine which color was on the top side from thousands of cards presented during a particular experiment. Ryzl found that certain individuals did exceptionally well on this type of experiment. His most successful and consistent subject was observed by a Western researcher who visited Ryzl and noted an experiment with a success probability of 10^{-5}. Ryzl also claims to have successfully transmitted a three-digit number with this technique by using considerable redundancy. In this experiment, a binary code was constructed from the two color possibilities. Probability of success for this experiment was about 10^{-15}. In 1967, Ryzl left Czechoslovakia for political reasons.

(U) In the early 1960's considerable publicity appeared in Czechoslovakia on psychokinesis experiments in the Physics Department at the University of Hradec Kralove in Prague. The investigations centered on the alleged ability of R. Pavlita, a factory department chief, and his daughter to cause movement of light metal foil by mental concentration. The foil, mounted in a sealed container, could apparently be made to start or stop rotating in specified directions. After 2 years of periodic testing, the experimenters concluded results were not sufficient for a scientific paper. However, in informal discussion, they felt some unusual and unexplainable effects occurred that could be an example of psychokinesis. Unfortunately, the popular press greatly exaggerated these "unofficial remarks," and the publicity apparently led to a discontinuation of formal research with Pavlita at that time. Dr. M. Ryzl also investigated Pavlita and was unable to find convincing evidence of psychokinetic ability. Apparently, considerable difficulty was encountered in separating ordinary energy transfer (such as body electrostatics or thermal radiation) from what might be considered paranormal effects.

(U) In 1973, a Czech social psychologist, Dr. Z. Rejdak, formed the International Congress on Psychotronic Research, which was intended to address a wide variety of paraphysics-type issues. This organization has had three meetings (1973, 1975, 1977) and has had considerable support from other investigators on a worldwide basis. Material presented by most Czech investigators at these conferences have been highly speculative and of a theoretical nature. Although interest is shown in both paranormal information and energetic aspects, it appears most investigations are of the type made public earlier by R. Pavlita. Some of these investigations have been reported to extend over 10-15 years. Unfortunately, the data available are not adequate for meaningful evaluation of the various claims. The investigations in general appear to be poorly controlled and poorly reported. Considerable publicity has once again been given them by the popular press which emphasizes applications that

appear to far exceed that suggested by the meager experimental evidence (even if exactly as reported). The major difficulty is that it is not clear what effects can be explained from known physical effects and what may be paranormal. The experimenters involved appear to be conducting such experiments on a part-time basis with limited equipment, which further affects reliability of results.

(U) As an example, a physicist, J. Krmessky, reports experiments where lightweight objects suspended on liquid film or thread supports have apparently been caused to move by mental volition. Another investigator, F. Kahuda, claims to have observed influences on radiometers. However, supporting data are either unavailable or unclear. Such experiments are by their nature sensitive to known energy transfer mechanisms and experimental control must be very high. Yet, these researchers may be observing some unusual effects at times, perhaps of the sort observed by Adamenko and Pushkin in Moscow. The energy transfer mechanism may somehow involve electrostatic-type phenomena, perhaps transferred in unusual ways. Researchers elsewhere (Canada, France, England) have also performed similar experiments and report similar results.

(U) Although R. Pavlita was involved in much debate in the early 1960's, he apparently continues to pursue his own research and has submitted reports to Rejdak's organization. His recent papers describe experiments where unusual specified motions have been induced in lightweight suspended objects, and where nonmagnetic material has apparently been made to behave as if magnetized when placed in metal containers that have been "acted on" by mental volition. These demonstrations have been observed by other researchers, who think there may be a degree of validity to them, since no apparent fraud has been detected.

(U) Pavlita refers to these containers as "psychotronic generators," or "biogenerators," since he believes they store "psychic energy" that can be transferred to other objects. This transfer, he believes, can cause new properties to appear in matter, or cause unusual motion to be induced (even by someone not considered to have psychic aptitude). This latter condition could be similar to that observed by a Western researcher visiting in Moscow, who apparently was able to mentally affect an object that Alla Vinogradova had previously "influenced."

(U) Pavlita's "psychotronic generators" have been widely publicized in the popular press, and much speculation on their military potential has been made. However, at this time these effects appear to operate at low energetic levels and may be due, in part, to static electricity.

(U) Although Z. Rejdak is openly active in serving as a coordinator for psychotronic investigations, he no longer appears to be active in research. However, he travels freely and visits researchers in the USSR and other Warsaw Pact countries. His activities appear sanctioned by Czech political officials, and he seems to get considerable support in his role as president of the Psychotronics Organization.

(U) Although official support for psychotronic research in Czechoslovakia is not apparent at this time, Rejdak's efforts may help generate such support in the future. While energetic-type phenomena will probably continue to be investigated, there is also new interest shown in paranormal perception. Such investigations may be easier to research, since energetic phenomena of the psychokinetic type appear to strongly depend on the people involved and are very difficult to replicate.

b. Bulgaria (U)

(U) Active investigations into paranormal phenomena began in the 1940's by G. Lozanov in Sofia. These early experiments were similar to Vasil'yev's sleep-wake experiments and were judged to be successful. Later, in the mid-1960's, Lozanov performed other experiments with blind people and noted some had an ability to distinguish differences in colors, and some could also describe drawings by "touch." In these experiments, the targets were underneath glass. These were similar to Soviet investigations generally referred to as "dermo-optics," and may be a form of clairvoyance. Dr. Lozanov also claims some of these blind subjects (usually children) improved their performance through training and practice.

(U) Around this time, a government-funded facility was created for the study and development of an accelerated learning method developed by Lozanov and included the study of parapsychological phenomena. This was called the Institute of Suggestology and was claimed by Lozanov to have a staff of about 30. Some of their investigations were with people who apparently had proven paranormal abilities.

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(U) Lozanov is very active, making many public appearances to discuss his accelerated learning techniques and paranormal phenomena in general. His work appears to be well accepted and he has stated that an open climate exists in Bulgaria for such investigations. Apparently, folklore that contains accounts of such phenomena has helped create this openness.

(U) Lozanov is best known worldwide for suggestology, his accelerated learning technique. This is not based on conventional hypnosis, but it has similar elements. Typically, a foreign language is taught by having students listen only indirectly to the teacher's lesson in a very relaxed, tensionless atmosphere. Music is usually in the background and the instructor's voice ranges from loud statements to low whispers. The next day, without further instruction or reading, the students are apparently able to recall most of the lesson's content. By such a technique, Lozanov claims that assimilation of new material can be 5-50 times faster than normal learning. Although his claims for suggestology are difficult to evaluate, it does appear to have some success. There is considerable interest in this technique on a worldwide basis; several centers currently exist in the US and Canada where such learning techniques are offered, usually for foreign languages.

(U) It appears Lozanov methods have been derived from various Yoga techniques. One of his early research objectives was to demystify some Yoga concepts and apply them in a practical sense. Lozanov has also studied paranormal phenomena claimed to be associated with certain Yoga practices. He claims to have observed, at times, evidence of telepathic abilities in some people during suggestology learning sessions.

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c. Poland (U)

(U) Investigations into telepathic phenomena occurred in the early 1920's at the University of Krakow, apparently with objectives similar to those of Vasil'yev's. Most of the 30 experiments were attempts to transmit sleep-awake commands to a highly suggestible subject and were conducted by staff members of the Physics and Chemistry Department. Although no formal reports are available, informal data indicate the experiments were considered successful. However, additional research was not continued.

(U) Investigations were also performed by several European researchers during the 1920's and 1930's on the abilities of Stefen Ossowiecki, a well-known Polish psychic. These investigations all concluded Ossowiecki displayed highly unusual abilities of a clairvoyant nature, including the ability to describe objects and written material sealed in lead containers and opaque envelopes. His achievements with numerous controlled tests of this type and his public psychic activities became well known; this publicity contributed to an openness toward paranormal phenomena in the general population.

(U) Recently, another Polish psychic from Warsaw, C. Klimuszko, has been receiving considerable publicity. He apparently has abilities similar to Ossowiecki (who died in 1944) and has been tested by the Psychotronic Section of the Polish Cybernetic Association. Specifics of such tests are not available, although they are claimed to confirm his abilities. L. Stefanski, a researcher from Warsaw, has also studied Klimuszko and claims he has the ability to obtain accurate information on lost or missing people.

(U) Stefanski believes hypnosis is necessary to develop and enhance paranormal perception, and apparently employs techniques similar to Kafka and Ryzl (the Czech researchers). He has also apparently had success with people who had not previously displayed any psychic aptitude.

(U) Another researcher, Dr. S. Manczarski, a physics professor, is also active in research, although specifics are unknown. Most of his work appears to be theoretically oriented.

(U) Although there is no indication of an extensive research effort in Poland, it appears there are at least a few dedicated researchers and people with reliable abilities (natural or developed). The backing of such investigations by the Polish Cybernetics Society will probably generate additional investigations and research in the future.

SECTION IV

SUBCEPTION (U)

1. Introduction (U)

(U) The preceding sections have primarily been concerned with ideational* phenomena mediated through the conscious mind—either as receiver or sender. However, it is known that there is a large class of stimuli which do not pass through from reception in the body to conscious awareness. The subliminal or unconscious assimilation of such information is known as subception. Subceived information may come to reside in the preconscious memory, available for recall to consciousness, or firmly rooted in the unconscious memory, unavailable for direct access by the conscious mind. The source for such stimuli, in addition to normal sensory channels, would include, for example, various electromagnetic or static fields. Human sensitivities to some of these stimuli would generally be beyond the capability of known sense organs and could range from merely sensing the presence of a stimulus to obtaining meaningful data from that input.

(U) Study of such sensitivities could add insight into ESP and other paranormal phenomena and could improve understanding of how such phenomena pass from reception to conscious or subconscious awareness. Study of subconscious response could assist in identifying responses that are not due to ESP sources and could provide insight on how to access subconscious content that may contain paranormal (or other) information. Although an idea or sensory stimulus resides solely in unconscious memory, it may still be processed for meaning and have direct or indirect effect on ideational and motor processes. The existence of such effects provides a means of indirect verification of the reception of an idea or sensory input by the mind.

(U) Some subception phenomena are discussed in this section that appear to be explainable from known physical sources. Methods for obtaining such information from subconscious memory are also considered. For example, the ancient practice of dowsing appears to be a means of utilizing subliminal sensorimotor responses to indicate the presence of a sensory input not directly available to the conscious mind. More recently, other techniques have been developed to test for the presence or nature of information in the subconscious mind. Such techniques have potential application in medical diagnostics and therapy, location of hidden objects or geological formations, interrogation techniques, and experimentation of extrasensory perception.

(U) Topics in this section include dowsing, ideomotor responses, EEG response, subliminal neuromuscular response, and various physiological effects. Many other related topics have been reviewed, but they will be reported in later studies.

2. Dowsing (U)

(U) In its traditional form, dowsing refers to location of underground water or other geological anomaly by an operator holding a forked stick and walking over the target area. Deflection or rotation of the stick indicates the presence of the anomaly sought after.

(U) "The dowser has the feeling that the rod is twisting by itself, and that he cannot prevent its deflection. Actually, the deflection of the dowsing rod is caused by the subconscious reaction of the muscles, and it takes a moment for the rod to assume a new position. The magnitude of the rod's deflection depends on the ratio of the tension of the individual muscle groups that hold the dowsing rod."[1]

*(U) Ideation. The formation or conception of ideas by the mind.

(U) One of the obstacles standing in the way of universal scientific acceptance of dowsing-BPE is the lack of a convincing body of experimental data to explain the information carrier and receptor mechanism. Although there is at least one East European report which insists that the information is carried through acoustic action of free water molecules on the inner ear,[17] most East European researchers believe that the information carrier acts through magnetic or electromagnetic waves or fields. The body of experimental evidence for an electromagnetic carrier is extensive, if not exactly clear. Some researchers feel that the shape and composition of the dowsing rod are not important,[18] while others claim that the rod can be tuned, by its shape, composition, or the addition of capacitors, to selectively indicate any of a wide variety of materials.[19-23] At least one researcher claims that the information carrier can be transmitted for some distance by an ungrounded electrical conductor.[24] Even while dismissing the role of the rod itself, a prominent Czech researcher cites experimental data that tend to confirm the electromagnetic hypothesis. Jiri Bradna claims that, "myotensiometry proved that the effect of water and metals changed the muscles' resting and action tonus even without holding the dowsing rod,"[25] and suggests that this finding might help to explain the correlation between illnesses and place of residence noted elsewhere in the literature. He further states the muscles of the forearm both radiate and are sensitive to electromagnetic waves in the 40 and 68 MHz range, "as well as other harmonic frequencies."[26] Other prominent researchers feel that the carrier is most likely in the 1-10 Hz range.[27]

(U) As seems to be true in other areas of paraphysics research, the presence of an artificial magnetic field seems to affect BPE performance, although a static electric field seems to have no such effect.[28]

(U) Whatever the information carrier channel or sensory mechanism, a significant portion of the population can show the effect. The exact percentage of the population remains in some doubt: one researcher "assumes" that 3% of all persons possess BPE sensitivity,[29] while another report puts the number at 20-30%.[30] Yet another indicates that there is a high correlation between hypnotizability and sensitivity to BPE, but also indicates that hypnotizing the subjects did not increase their sensitivity.[31] In any event, it is clear that BPE sensitivity is not merely the province of a select few persons.

3. Ideomotor Response (U)

(U) The ideological need of the Communist countries to express all paraphysics observations in materialist terms has led to an unfortunate grouping of two different phenomena under a single name: the biophysical effect (BPE). As the preceding discussion indicates, BPE has been applied to sensorimotor response to subliminal cues from the external environment (dowsing). In addition, one group of Romanian researchers has applied the same term to ideomotor response to subconscious ideation; in this case, the so-called Wedding Ring Test.

(U) Subliminal Ideomotor Response (SIR) as used here refers to muscular activity caused by the subconscious mind in response to an explicit or implicit question put to the subject. In its traditional form, it is carried out by suspending a light, dense object (typically, a wedding ring) from a thread held in the hand by the thumb and forefinger. After assigning meaning to various forms of motion of the suspended object,* the subject can be asked questions, and the response will indicate the answer as it is known to the subconscious mind. Often this method allows the subject to answer questions for which the conscious mind does not believe there is an answer available, or believes an answer different from that resident in the unconscious.

*(U) For example: forward and back set to mean yes; side-to-side to mean no; circular motion to mean unknown. The arbitrary meanings thus set are then tested by asking questions to which the answer is unequivocally known. Obviously, any possible response with a simple choice answer (yes/no, boy/girl) can be asked if the subject properly assigns the meaning of a muscular response in the subconscious.

(U) In the form outlined above, SIR has been used by a number of Western clinical psychologists for decades, because it gives limited direct access to the contents of the subconscious memory without the need to alter the consciousness state of the subject. However, the technique is not easily explained in the Pavlovian model of psychology nor in strictly materialist terminology. Consequently, use of and research into SIR has not been encourged in the Soviet Union and Warsaw Pact countries.

(U) By classifying SIR as a manifestation of the BPE, the Romanian team has met the demands of ideology. However, that taxonomic decision has impacted on their model and methodology of SIR research.

(U) The most recent set of Romanian experiments reportedly attempted to make the sex determination with the subject unaware of the question being asked.*[32] While single or double blind experimental protocols are desirable when the intent is to isolate the subject from external cues, it is hardly helpful when trying to extract information already known to the subject. The results and the conclusions drawn from them suffer accordingly.

(U) In the earlier of two known Romanian experiments in SIR, expectant mothers were able to determine the sex of their children with 66% accuracy (n = 15). In the later, larger test, 82% was achieved (n = 46.)[33]

(U) The report of the earlier experiment suggests a medical use of SIR as a diagnostic tool. By freeing SIR of the artificial conceptual restraints imposed by the BPE model, the possible applications to medical diagnosis appear considerable. The import of SIR as used to report internal physiological conditions is that a condition existing within the body** can be perceived at the subconscious level and is available at that level for processing to a high level of abstraction without being accessible to the conscious mind. Although there has been no known attempt in the Warsaw Pact to make the extension, conceptually the technique could be applied to the detection and diagnosis of virtually any medical condition.

4. Myotransfer (U)

(U) Myotransfer refers to the direct transfer of information or energy from the muscles of one organism to those of another, without mediation through the nervous system.

(U) Although there have been persistent, unconfirmed reports of research on this field in the Soviet Union, the most important known Warsaw Pact researcher is Jiri Bradna, a medical doctor at the District Institute of Public Health, Kutna Hora, Czechoslovakia. Bradna maintains that energy can be transferred from one person to another by moving or tensing the muscles. The energy transfer is

*(U) There are, of course, several ways in which the subjects (expectant mothers) could have subconsciously reacted to the intent of the test. The protocol was not double-blind; the researcher could have cued the subject either by subliminal cues or through telepathic leakage. Since the intent of the test was identical to the use of SIR in popular mythology, and in widespread use among the general population, the possibility of subconscious response to an unasked question is obvious.

**(U) Such as, for instance, the composition of the amniotic fluic and the correlation of a particular composition or constituent with a particular sex of the child.

said to be effected up to a distance of several meters. On the basis of experiments with a wide variety of electromagnetic shielding and transmitting equipment, Bradna claims to have firmly established that the primary energy transfer takes place through electromagnetic waves in the VHF band.*

(U) The effects of myotransfer can be noted in several ways. The most direct is the contraction or tensing in a target muscle, caused by the tensing of a muscle some distance away. Bradna also claims that myotransfer affects a dowser, and that the activity of other persons in the vicinity of a dowser will register a reaction of the dowsing rod.[35] In fact, Bradna reports deflection of a dowsing rod when, unknown to the operator, a nearby preparation of frog muscle was artificially stimulated.[36]

(U) The most dramatic effect reported was the use of myotransfer for therapy of paresis. Bradna cites extensive clinical experience to support his contention that myotransfer techniques can be of considerable value in treatment of paralysis, even in cases which had not responded to traditional physical therapy.**

(U) Although it is entirely likely that some or all of the claimed healing effects can be accounted for on the basis of suggestion, autosuggestion, and feedback, the evidence and controls reported by Bradna are sufficiently extensive to have impressed other researchers in the field. Zdenek Rejdak, for instance, who is quite critical of the work of some other researchers, seems to fully accept the findings of Bradna.[38] It is known that Bradna's work and results have been publicized to some degree in the Soviet Union,[39] but to date there is no evidence of research along similar lines outside Czechoslovakia.

5. Electroencephalogram Response (U)

(U) Presumably, if a sensory or extrasensory input reaches the brain at a subliminal level, it should have some effect on the activity of the brain, even though the subject had no conscious knowledge of it. The most direct means of measuring this possible response is through the EEG. However, the EEG record from an area of the brain is the resultant of all mental activity*** from the area, and contribution to the EEG record made by a single subliminal input could be vanishingly small. Furthermore, there is a high degree of randomness in an EEG record—so much so that some researchers have despaired of using the EEG as an indicator of paranormal information reception.[40]

(U) Gennadiy Aleksandrovich Sergeyev, the most prominent Soviet proponent of EEG analysis in paraphysics, has applied the theory of nonstationary random functions to EEG research.[41] Using this technique, Sergeyev reports a correlation between the degree of turbulence in external (solar and geomagnetic) fields, and the EEG records of humans. In Sergeyev's view, there is a causal relationship between the external fields and psychic functioning. In normal persons, accuracy of motor reactions (for fine motor skills) decreased by a factor of about 3 to 5 during periods of solar and magnetic anomalies. In a psychically disturbed person, the "deterministic functions are weak, and to a significant extent he is exposed to the effects of the external physical fields. This fact is confirmed by the increased probability of psychic relapses in persons with weak mental activity, during periods of solar, magnetic, etc., anomalies."[42]

(U) On this basis, Sergeyev has determined that the brain does respond directly to external magnetic and electromagnetic fields and indeed changes its patterns of functioning in response to them.

*(U) Myotransfer could be stopped with metal filters and aluminum foil. The field could be deformed with magnets, ferrites, and first-class conductors; it could be reflected and transmitted over waveguides, and filtered with grids.[34]

**(U) In his most recent extant article on the subject, Bradna reports his results obtained with myotransfer in 243 patients.[37]

***(U) These could also be influenced by some muscle activity on the head.

[redacted]

(U) In another experiment, Sergeyev investigated the electroencephalographic response to optical stimuli. "Flashes of light directed at the eyes of the agent were used as stimuli, the rhythm of the flashes varying for each eye."[43] Both Sergeyev, in his report on the experiments, and Milan Ryzl, in a separate report on the same experiments, claim that the EEG of a remote percipient was affected. Neither report, however, makes explicit the exact nature of the EEG response recorded in the percipient. Sergeyev does note that the EEG of the agent (the sender) exhibited a pulsation with a frequency equal to the difference between the pulse rates of the two lights. This indicates that the EEG record reflects the sensory inputs only after considerable processing by the visual cortex, involving both hemispheres of the brain. Furthermore, Sergeyev indicates that the remote percipient had a subjective impression of moving light and dark bands in the field of vision, similar to an interference pattern, when the two frequencies were relatively close. This would seem to imply that the percipient was receiving a message from the agent which reflected the agent's post-processing perceptions (output from the visual cortex) rather than the input stimuli directly.

(U) There are indications that Sergeyev would logically be led to more sophisticated applications of his statistical techniques.[44] However, the implied follow-on work has not been published, even though Sergeyev is known to be active in the field. Other researchers have worked in the field of EEG recording and interpretation, and have done at least some work in relating the EEG to paraphysics. Prior to his death in the early 1970's, Dr. Pavel Gulyayev and his team* were known to be doing research in the field, although little directly related to paraphysics has been published since the early 1960's. Presumably, the research effort continues at some level, but little is known about its scope or direction.

[redacted]

6. Suppressed Nueromuscular Response (U)

(U) Under sensory or ideational stimuli, there is often a subliminal or reflexive muscular response made which is not consciously desired. Under these conditions, the conscious mind can usually inhibit most or all of the muscular action. Nonetheless, there is usually some small neuromuscular response during such inhibition.

(U) Although this inhibited response is normally quite small and subtle, a sufficiently sensitive person or sensor can make use of it to derive a significant amount of information from the conscious mind of the subject. This neuromuscular response is often used by stage performers to make it appear that they are reading the mind of a subject. Such performances have been given for decades by such Soviet performers as Mikhail Kuni and Wolf Messing[45] and are commonplace amongst such Americans as Kreskin. In such a demonstration, the performer typically asks a member of the audience to think of a specific command for him to do, and then performs it without apparent instruction from the subject. To the unsophisticated observer, it appears that the performer has read the mind of the subject. However, even the performers themselves will sometimes admit that their information comes from subtle cues in the behavior of the subject.

(U) While the sort of performance outlined above does not present convincing evidence for telepathy, it is indicative of the amount of highly specific information that can be read from the suppressed neuromuscular responses of a subject. The implications have not been missed in the Soviet Union. As early as 1962, it was known that the Institute of Psychology, Moscow,** was attempting to

*(U) Subordinate to the Academy of Pedagogical Sciences, RSFSR. Until recently, psychology in the Soviet Union was considered a branch of Pedagogy.
**(U) At the Laboratory of Physiological Cybernetics of the Bekhterev Brain Institute, and also at Leningrad State University.

[redacted]

derive meaning from signals sent to the lower lip during questioning. It had been discovered that such signals are invariably sent and could be detected, even when the subject did not speak. "We have performed many experiments and it has turned out that, when the subject thinks of something, his tongue and lips make imperceptible movements, registering his thoughts."[46] Although the press report indicated that the Soviet researchers at that time had not been able to read out speech directly on the basis of such signals, research was being carried out in that direction: "Deciphering of the signal is in principle . . . apparently possible. Some scientists are now working on the creation of a scheme for reading the code of internal speech."[47]

(U) The application to interrogation techniques, whether for the police or for the intelligence organizations, is obvious. Direct readout of unintentional signals sent to the lips and tongue by a subject (called subvocalization) could be used to extract highly specific information from a source involuntarily and painlessly.

[redacted]

(U) If the above work on sensors to derive information from suppressed neuromuscular signals is a credible indicator of the current state-of-the-art in Soviet technology in the field, it should also be reported that much more ambitious work is being undertaken for much longer term development. Academician Viktor Mikhaylovich Glushkov, Director of the Instititue of Cybernetics, Kiev, claims that his institute is working on a means to interface human thought directly through a transducer attached to the head, and read directly for mental activity by a computer:

> "Thus, all information, the entire cognitive process, will enter directly into the electronic computer. It will memorize the entire mode of thinking of its partner, all nuances of his creative processes and it will be able to receive any orders from him, as soon as he will have time to think of them.
>
> "Just as it is possible to obtain the full symbiosis of man and machine, so is it possible to obtain full compatibility of the work of our brain and that of a computer. I think the scientists can attain this somewhere in the region of the year 2020."[48]

*(U) At the Lab of Physiology and Biochemistry of Animals, Institute of Zoology, Kishinev.

[redacted]

(U) While the above, somewhat fanciful account for a popular magazine is clearly well beyond the current Soviet state-of-art, it could describe one direction toward which Soviet research is known to be headed.*

7. Involuntary Physiological Changes (U)

(U) There is no longer anything mysterious in the fact that the body experiences certain subtle physiological changes under emotional stress. Changes in blood pressure and volume, heartbeat, muscle tonicization, and galvanic skin response under stress have long been known to physiologists and polygraph operators. It is worth noting, however, that changes in blood volume (as measured by the plethysmograph) have been noted during periods of telepathic reception and are being used by Soviet and East European researchers as indicators of subconscious telepathic reception. In addition, Bradna has reported changes in galvanic skin response and skin electrical potentials between the hands of BPE operators in a dowsing area.

*(U) The suggestion that the Soviet Union may be involved in use of computers for direct reading of human thoughts may be less fanciful than it appears. Academician Glushkov, quoted above, is also a member of the Scientific Council of the Academy of the Ministry of Internal Affairs (MVD), Moscow. The purpose of the academy is to provide graduates with a mastery of the "most up to date criminological methods." (Sovetsaya Estoniya, 31 August 1974, No. 204, p 4.)

SECTION V

THEORETICAL ASPECTS (U)

(U) Although the actual mechanism for explaining paranormal informational and energetic processes is unknown, several possibilities have been under consideration. The most promising theoretical models are discussed in this section.

1. Electromagnetics (U)

(U) Early theories for explaining suspected paranormal processes were based on electromagnetic concepts. Vasil'yev's experiments in the 1930's, however, suggested electromagnetic waves may not be a possible information carrier, since his shielded room experiments appeared to be as successful as the nonshielded room experiments. Later, Vasil'yev, as well as other worldwide researchers, reconsidered the electromagnetic basis since it was recognized that some frequencies are not significantly attenuated by ordinary shielding, particular the very low and extra low frequencies (VLF, ELF).

(U) I. M. Kogan continued exploring electromagnetic concepts, mainly from an information theory point-of-view. He concluded that telepathic processes are not incompatible with known electromagnetic theory and could occur in the low frequency portion of the spectrum. His analysis was based on estimates of power levels that could be generated by natural currents within the brain and for low data (bit) rates. Views of telepathic phenomena as being basically a low bit-rate process resulted from analysis of his own experiments and consideration of reported worldwide experiments in general. In his theoretical model, Kogan considers the low velocity of current propagation along body nerve fibers as possibly acting like a matching antenna for detecting very long wavelengths (very low frequencies). He also views such waves as being propagated worldwide via spherical waveguide characteristics of the earth-ionosphere system. Attenuation for such waves would be negligible, even at long distances.

(U) Another possible transmission mode considered by some researchers involves naturally occurring low frequency electromagnetic waves. Similar natural or induced frequencies in the brain could conceivably react or interfere with these natural frequencies in such a way as to cause specific interference patterns to be scattered throughout the earth-ionosphere system. Such patterns, if detected, could stimulate or trigger corresponding patterns (or images) in others who have similar sensitivity and shared experiences. In this sense, the "modified" signal would only need to cause an association (probably of very low bit-rate) and need not represent precise data. The resulting conscious impressions may appear to be complex and of high data rate characteristics; however, the pattern-making apparatus in the brain may have approximated portions of the original message or target. Power requirements for this mode would be considerably less than the model involving generation of new electromagnetic waves. In this model, information transfer could occur with appropriate learning or conditioning, even for complex targets. Alternately, increasing exposure time (i.e., time available for a paranormal task) could also improve quality and accuracy of telepathic or clairvoyant impressions.

(U) Naturally occurring low frequency waves have been noted throughout the ELF and VLF region and are usually a result of geomagnetic variations, solar activity, and normal electrical equipment operation. These natural waves also occur at particular resonances between 7 and 33 Hz (Shuman waves). Other trapped waves exist in the VLF region and have peak intensities in the 2,000-20,000 Hz region.

(U) Natural occurring electrical activity noted on the surface of the brain is also in the ELF region (1-50 Hz). The lower portion of this region is reported by some researchers to be conducive for psychic functioning. Sergeyev has reported measuring weak electromagnetic field effects a short

distance away from a person who was attempting paranormal processes of an energetic type. Frequency variations were in the 3-6 Hz region, consistent with the electrical activity of the experimental person's brain. However, paranormal processes of an informational type appear to generally correlate to the 7-18 Hz region. Individual neuronal activity also occurs in the 100-1,000 Hz region; however, these are very weak signals and are difficult to detect.

(U) Other investigations into electromagnetic radiation effects may also contribute to the theoretical understanding of the psychic processes, particularly if electromagnetics is found to be the main transmission mode. The work of a Moscow physicist, A. S. Presman, for example, encompasses a wide variety of electromagnetic field effects on living organisms. Yu. A. Kholodov, a Moscow physiologist, has also performed extensive research on reactions of biological systems (including nervous system) to a wide range of electromagnetic and magnetic fields. Other researchers have also noted specific human sensitivities to very weak magnetic fields and magnetic field variations of extra low frequencies. Some of these observations include psychological as well as physiological effects.*

(U) Although such research suffers from lack of repeatability, enough consistent reports appear worldwide to suggest that living organisms, including the human central nervous system, do have a far greater sensitivity to a wide range of electromagnetic influences than has been commonly assumed.

(U) Other research has been reported that investigates effects of emitted radiation from cellular division processes (mitogenic radiation). Some researchers note this radiation (usually in the UV band) has a communication-like influence on adjoining cellular samples.

(U) Such research may not only contribute to understanding of paranormal processes but may also clarify limits to normal subliminal or subsensory modes. A considerable overlap may exist, particularly if psychic functioning is eventually proven to be electromagnetic in nature. However, electromagnetic theory may not be the only model for psychic functioning. I. M. Kogan, the leading USSR advocate on electromagnetic basis for paranormal phenomena, also recognizes that other physical phenomena or fields of a different nature may be the main mechanism.

2. Quantum Physics (U)

(U) There are several concepts in quantum physics that can, at least in theory, permit processes such as paranormal perception. This arises from the wave or probability function description of reality, and the interconnection of observation or measurement with quantum level processes. This interconnection can in principle be extended to include consciousness, since the end result of an observation has an interpretation (and therefore an interaction) in conscious or subconscious mental processes.

(U) One aspect of this can be expressed by the Einstein-Podeski-Rosen (EPR) paradox which basically states that elementary particles with the same quantum characteristics are bound together; a change in one causes a similar simultaneous change in the other regardless of distance between them. This concept of quantum level correlation, or coupling, can lead to several interpretations and models that could be consistent with psychic processes.

(U) One difficulty with these concepts is that they do not add any insight on the nature of the propagation mechanism. Some theories have been advanced, but they involve fundamental concepts of space-time and are very abstract.

(U) A Soviet researcher, V. Pushkin, has advanced views which are combinations of quantum physics and electromagnetics. In his view, a coherent type of radiation between properly coupled cells could also contain types of information. In a large molecular aggregate, such as a liquid crystal, a wide range of coupling possibilities could exist, particularly if various sub-domains of the structure have different quantum characteristics.

*(U) Another interaction possibility from non-ionizing electromagnetic radiation (NIEMR) is already under intelligence study.

(U) Since immense quantities of neutrinos and antineutrinos are continually present, some theorists have considered this flux as having a role in paranormal processes. Neutrinos have only quantum characteristics of "spin" (no charge or mass), and their probability of directly affecting people is extremely low. However, it is possible that neutrinos in certain energy levels could cause a stimulated emission type interaction with molecules. A wide range of discharge frequencies would be possible, including VLF and ELF frequencies. These frequencies could then provide a basic interaction mechanism.

(U) Another possibility is that neutrinos generated from maser-like stimulated discharges of molecules in the brain might create resonant modes in similar molecules or molecular sets in the brain of a remote person. Such interactions could have sufficient modulation (perhaps induced by mental activity) for practical information transfer. A major difficulty would be in required energy levels, unless such hypothetical neutrino fluxes were highly coherent and somehow oriented in the proper direction. Perhaps a quantum-type coupling could maintain the necessary orientation (assuming an initial alignment occurred), much like a gyro maintains an orientation to a fixed reference. Such coupling has already been theorized (Einstein-Podolski-Rosen paradox) and would appear to be central to virtually any model involving paranormal processes.

(U) Quantum physics concepts have also been postulated to account for certain energetic processes, such as psychokinesis. In this case, a quantum coupling effect between mental processes and a material specimen could have an organizing influence on random thermal energy or other noise already present. This redistribution of available energy could lead to material distortions or other effects, depending on degree of coupling and quantity of energy present.

(U) It is difficult to form final judgements regarding the various quantum models that could relate to paranormal processes. However, researchers note that the history of physics has been full of surprises and suggest quantum level explanations should at least be considered along with all the other possibilities.

3. Gravitation (U)

(U) A. Dubrov, a Moscow physicist, has proposed a model for paranormal perception based on a gravity-type interaction. In this concept, he considers it theoretically possible for aggregates of biological molecules that are in a loosely bound state (liquid crystal type) to create very weak quasi-gravitational field effects. This would result, in his view, from variations in gravitational attraction forces arising from changes in relative molecular spacing. The net effect would be a very small gravitational-type perturbation. This would be in addition to normal gravitational attraction and gravitational perturbations which are theoretically possible from thermal oscillations.

(U) Dubrov suspects that high strain conditions, such as muscular contraction, cell division, or neuron activity in the brain, could create such quasi-gravitational waves of sufficient strength for distant interaction. G. A. Sergeyev has expressed similar views and has adopted Dubrov's concepts into his own theoretical work. Sergeyev considers the brain to be of a "paracrystal" nature which can emit (and absorb) a wide variety of electromagnetic radiation, including gravitational effects. Vasil'yev had also considered gravitational type interaction with the brain as a possibility for telepathic phenomena. His view is based on a gravitational modulation effect that the brain could somehow create, and not on generating new gravitational waves.

(U) It is not clear how gravitational models would permit useful information transfer, unless proper alignment (from quantum physics coupling concepts) and a type of selective gravitational resonance or modulation with appropriate distant molecular structures would also occur. This problem has also been considered by Dubrov from the view point of alterations in the properties of time that result from gravitational changes. Such alterations could have an information transfer characteristic. This approach is highly speculative and could lead to several theoretical objections; however, it cannot be absolutely eliminated as a possibility.

4. Holography (U)

(U) A model for brain functioning has recently been proposed that could also add insight into paranormal processes. This model considers the brain to have characteristics like a hologram, similar to conventional ideas of holography in laser physics. This hologram-like attribute is compatible with observed data on how memory appears to be distributed throughout the brain, and on observed data involving learning and learning disorders, imagination, perception, altered states of consciousness, and other aspects of brain functioning. A key to this model is the observation that large brain molecules (neuropeptides) appear to have a significant role in brain regulation. In addition to regulating neural activity, these large molecules may also influence frequency and phase relationships between different regions of the brain, which is another similarity to a holographic process.

(U) Central to this theory is the recognition that coherent frequencies would be required. Although his theory does not clarify what these frequencies are or their source, it may be they are generated by quantum events within the brain, or that proper frequencies from outside sources are involved, or both. Some candidates for naturally occurring frequencies would be as discussed earlier (e.g., ELF, VLF, neutrino flux, gravitational waves) or other types not yet considered.

(U) This holographic model is easily adaptable to psychic processes, since this concept considers a basic hologram to potentially exist throughout the universe. This would be similar to the idea of a gravitational field extending to infinity. In any hologram, a small portion can reproduce data similar to the original, although not as accurately. In this sense, specific remote information exists throughout such a hologram and can somehow be accessed by appropriate "paranormal" processes in the brain. This model in essence views the brain as a hologram, interpreting a holographic universe.

(U) Researchers have also noted the brain appears to generally have two basic functional localizations. In right handed people, the left hemisphere functions in a logical, linear, analytical mode; the right hemisphere functions in an intuitive, artistic, holistic (pattern making) mode. Psychic processes appear to be of an intuitive, artistic nature and are very likely associated with right hemisphere brain functioning. This possible association is strengthened by noting that responses of people with brain damage to the dominant left hemisphere* are similar to responses from people performing certain psychic tasks. Specifically, there are similarities in how drawings are made and interpreted. Similar distortions occur, and inability to verbalize or analytically identify results is similar. This also suggests that a holographic process is ultimately involved in psychic functioning.

(U) It appears that research into basic brain functioning and perceptional aspects could lead to additional insight into psychic processes. It is known that A. Luriya, the leading USSR neurophysiologist, is actively researching brain functioning and has already shown high interest in psychic phenomena in the 1973 publication of "Parapsychology: Fiction or Reality?" Another author of this paper, V. Zinchenko, is also known to pursue research into visual perception and visual imagery. This research includes a variety of brain processes involving imagery and memory. The nature of mental imagery appears to be of a holographic character and would be a natural common point for a variety of related research. This type of research could add additional insight into holographic-type models of brain functioning, or lead to new and more complete models. This research may also contribute to the understanding of psychic phenomena, perhaps in combination with other existing theories.

5. Other (U)

(U) There are several other concepts advanced to explain paranormal processes. Some of these are rather abstract and may not be theoretically proper. They are difficult to interpret in terms of physical reality and would not necessarily contribute to experimental investigations. Others appear

*(U) e.g., optic agnosia.

to incorrectly use terminology from known physical concepts. An example would be Sergeyev's concept of a "bioplasma." His intent is to call attention to the electromagnetic nature of living organisms (which is not disputed), but he uses out-of-context analogies from plasma physics. Other theories exist which draw heavily on physical concepts that are themselves in question. Some theories (and terms used) appear to be designed to skirt ideological issues and are not based on a well thought-out or theoretically proper argument. One such theory is that of a Czech researcher (Kahuda) that appears to involve misinterpretations of fundamental physics.

(U) Confusing terminology is also common in this research. Some unusual terms are developed as an honest attempt to bridge gaps in understanding, some are due to ideologically acceptable considerations, and some are due to the desire for individual recognition. Creating new names sometimes invokes an air of authority that is not warranted; Warsaw Pact researchers are as prone to this tendency as researchers elsewhere.

(U) However, it does appear that the various concepts may at least serve as a bridge toward opening a meaningful dialogue in a variety of research areas. A multidisciplinary research approach that eventually may clarify key theoretical issues appears to be emerging in the USSR and on a worldwide basis. It is certainly recognized that paranormal processes are not openly accepted in many areas. As is true for any emerging area of study, initial difficulties are great, language and terminology barriers exist, and resistance in established areas of research is high. In an area as complicated as paraphysics (especially psychic functioning), such difficulties can be expected. Yet these difficulties may not necessarily impact on eventual applications. An application emphasis is apparent in the work of many Warsaw Pact researchers and should pose a greater concern than their ability (or inability) to formulate appropriate theoretical models. It may well be that pursuit of application modes may be required before the most appropriate theoretical models are developed. Insight gained from possible application achievements may also clarify theoretical directions.

SECTION VI

PARAPHYSICS RESEARCH ENVIRONMENT (U)

1. Belief Structures (U)

a. Marxist-Leninist Ideology (U)

(U) For nearly half a century, the natural sciences in the Soviet Union have been under the control of the Communist Party. Between 1929 and 1932 the Soviet Academy of Sciences was largely purged of its pre-revolutionary leadership, and party members were installed in key administrative positions. Initially, there was no attempt to attach ideological significance to the works of natural scientists, but the bureaucratic structure over the scientific community was tightened and brought under the party's control. By the end of the 1930's,

> "Appointment of officials influential in science and education—ministers of education and agriculture, presidents of the All-Union Academy of Sciences and of other specialized academies, rectors of the universities, editorial boards of journals—all were under the control of the Party organs. Approval of science textbooks for use in the school system and even the awarding of scientific degrees to individual scholars were also under close political supervision."[1]

(U) From the end of the Second World War until his death, Stalin attempted to bring the substantive findings of science under political control. The most obvious and flagrant example was in the field of genetics, where Lysenko and his concept of biology were enshrined as the official Soviet view in 1948. But similar battles were waged in the Soviet scientific community about relativity, quantum mechanics, cybernetics, and other fields. In each of these, scientific progress was delayed until the issues were resolved, which sometimes took several years (or, in the case of genetics, decades.)

(U) As a result of this pressure from Marxist ideology, each science in the Soviet Union has had to develop a rationale to meet the challenge of the ideologues. The first task of any discipline has been to justify its existence within the Marxist system. By and large, each scientific discipline has met this challenge, and in the post-Stalinist period there has been a relative return to normalcy in the intellectual life of the Soviet scientific community. However, relative freedom from persecution has been bought at some cost in terms of the areas which were available to open research, and of the paradigms that could be used to explain observed phenomena.

(U) The battleground through which most of this controversy was waged, of course, was the Marxist doctrine of dialectical materialism. Both psychology and paraphysics were compelled to deal with the problem of consciousness and the material nature of thought. As a result, psychology found itself confined to the narrow Pavlovian conditioned response paradigm, while paraphysics was defined out of existence a priori.

> "The arguments about the possibility of direct transmission of thought at a distance not only have a bearing on the sphere of physiology, but are also bound up with a fundamental philosophical problem, namely, the nature of consciousness and its relation to matter. . . .
>
> "Those who consider that the transmission of thought at a distance is possible are deeply mistaken."[2]

(U) A crucial tenet of Marxist philosophy is the notion that the course of history is determined by material reality, and that all events are explainable on the basis of known or knowable physical laws. The idea that a nonmaterial entity could affect the course of events strikes at the heart of that doctrine and is therefore antithetical to Marxist ideology.

(U) The dispute was particularly acute, of course, because the Communist claim to a scientific understanding of history is based upon the materialist doctrine. Should that fail, or be shown to have major exception, then the foundations of Communist Party rule and one-party government would be open to serious challenge. The point was not missed by party ideologues. By at least one line of reasoning, the phenomena which compose paraphysics can be understood to imply the existence of nonmaterial causality; it is but a short step to the anathema: the supernatural.

(U) In Marxist thought, the key is the nature of consciousness. Consciousness is defined as the reflection of the material world, and therefore is acted upon by material reality, rather than itself being a causal agent.

> "Consciousness is nothing other than the most perfect reflection of the material world. From this it follows that matter is primary and consciousness secondary. This is to be understood not only in the sense that consciousness is a product of matter, but also that the content of consciousness is defined by the material reality which it reflects.
>
> "Some materialists have declared that consciousness is a special variant of matter, allegedly manufactured by the brain, rather as the liver produces bile, for example. These are vulgar materialists. . . . Thought can neither be seen in a modern microscope nor can it be weighed or measured by a slide-rule. Consciousness does not possess physical properties."[3]

(U) During the late Stalinist period, the attack on paraphysics from official sources was virulent. The party-approved encyclopedia, for instance, was unequivocal in its denunciation of telepathy, which it defined as, "the antiscientific, idealistic fiction about supernatural abilities of man to perceive phenomena which by location and time are inaccessible to perception. . . ."[4]

(U) Needless to say, from the late 1930's until after the end of the Stalinist period, virtually no paraphysics research was conducted in the Soviet Union; certainly none was reported. The sole exception to this was in dowsing, which was allowed to continue throughout the entire Stalinist regime. The researchers assisted by defining their field in materialist terms. The "biophysical effect" certainly sounds more respectable and less threatening to a party functionary than does "water witching." (The invention of the term was like a scientific breakthrough.) Even more important, by demonstrating their ability to locate water and other needed natural resources during the period of forced collectivization and industrialization, the dowsers were able to meet the most severe test of ideological legitimacy of the time: utility. For its part, therefore, the regime allowed dowsing activities to exist, if not exactly to flourish.

(U) Like other sciences, paraphysicists have had to spend considerable effort in justifying their field on ideological grounds. The first attempt seems to have been to assert that the phenomena were mediated through known, if not exactly demonstrable, material mechanisms. Electromagnetic waves became a favorite explanation for telepathy, despite the argument that electromagnetic effects caused by physiological processes were much too diffuse and weak to cause the noted phenomena. The other major attempt has been to acknowledge that the information or energy transfer mechanisms are not known, but to assert that this simply reflects the imperfect state of contemporary scientific knowledge. Lengthy sections devoted to ideology and quotations from Lenin are frequently found in the works of paraphysicists, particularly in the early and mid-1960's.

(U) It appears that the attempt at ideological justification has been largely successful. The current edition of the Large Soviet Encyclopedia treats "parapsychology" (which is used in much the same way as "paraphysics" is used here) in a radically different manner than telepathy had been treated two decades previously:

> "Essentially the basis for unifying all these domains under the term parapsychology is the secrecy and the mysteriousness of the phenomena under investigation. It is not appropriate to regard such a basis as sufficient for the distinction of this singular domain of scientific research. . .
>
> "The problem is that the concept of parapsychology must be divided into two categories, imagery or imagination as claimed by mystics and charlatans, and on the other hand, phenomena that actually exist but are not yet scientifically clarified by scientific psychology and physics. The former require exposure and demystification. Researches on the latter should be conducted in scientific institutes for psychology, physiology, biophysics, etc."[5]

(U) However, paraphysics, like the other sciences, has bought success in justifying its existence only by paying a price in terms of restricted acceptible paradigms and prohibitions against some forms of research. To some degree, this may even be an advantage. Given some of the claims made by some Western "occult scientists" and the extreme lack of probability that their claims will prove to be sicentifically productive, it may be beneficial for the USSR not to pursue such investigations. Nonetheless, certain other areas which may have great scientific importance are similarly restricted in the Soviet Union, at least in part, on ideological grounds.

(U) Clairvoyance is an example. Unlike telepathy, there is no obvious "sender" of information, which makes rationalization of the phenomena on the basis of known physical principles rather difficult. Precognition, which appears to violate the familiar laws of causality and unidirectional flow of time, causes similar difficulties. Needless to say, relatively little reserach in these fields is known to be done in the Warsaw Pact. Furthermore, it is a commonplace occurrence for paraphysics research results to be interpreted by some observers as supporting various "supernatural" paradigms which, of course, are anathema to Marxist ideology. For this reason, most of the more serious paraphysics researchers are careful to include limited statements about the probable import of their results in terms of physical mechanisms in all their reports. There is a related conscious, though not entirely successful, effort by such researchers to avoid sensational press coverage of their activities.

(U) Other reports have rightly noted the strong tendency of Soviet and East European researchers to emphasize the physical explanation of the phenomena they are dealing with, rather than to simply report on those phenomena. The normal course of science is to change explanatory models only when a large body of evidence has accumulated which clearly indicates that the current models cannot explain the observations. In the Soviet Union, such ambiguity cannot be tolerated in paraphysics research, and there is a strong need on the part of all paraphysics researchers to assert a presumed physical basis for their observations which does not violate known physical laws. This has had the tendency to force the acceptance of explanatory models in the Soviet Union well in advance of adequate experimental data to confirm the model chosen. The effect of this may be a premature closure of options that may encourage empirical research to take unproductive lines in order to remain ideologically acceptable, while concurrently discouraging research which would contribute to testing of alternative models.

b. Scientific Paradigms (U)

(U) The attack of the party upon the sciences, and specifically papaphysics, has had a considerable effect. However, it remained essentially an attack from without, which could be resisted

en bloc by the scientific community. Those scientists who joined in the attack on science on ideological grounds were invariably fourth-rate scholars who did not command the respect of their peers.

(U) The challenge from within has been more difficult to deal with. As noted earlier, paraphysics deals with phenomena which seem in some cases to violate known physical laws. In addition, some phenomena imply physiological sensitivities and psychological activities which violate contemporary concepts. Furthermore, the field has had such extensive experience with fakes and charlatans claiming scientific discoveries that science as a whole has been felt discredited by association. For a number of reasons, then, paraphysics has been a bitter pill for established science to swallow.

(U) There is nothing new, of course, in the scientific establishment resisting recognition of discoveries or theories which upset the prevailing paradigms. Even Albert Einstein, for instance, resisted quantum mechanics. A scholar who has invested his life in the development of a particular line of thought needs an exceptional agility of mind to welcome a discovery which challenges that model. Many eminent scientists throughout history have been unequal to the challenge of new developments.

(U) Paraphysics, of course, with its provocative implications, has generally met with considerable resistance in the USSR. And here the opposition has been more difficult to overcome in the scientific community. There are a number of highly respected scholars who have deep reservations about paraphysics and who have felt the need to challenge claimed experimental results which violate their concepts. The fact of their scientific reputation and the mental skills which earned them that reputation make their challenge difficult to dismiss lightly.

(U) The conflict of competing ideas, of course, can be a highly creative process, and there is no doubt that the attempt of the paraphysicists to meet the sceptics on their own ground has yielded some highly useful results. The debate has spawned improved experiments, sharpened explanatory models, and improved the understanding of both sides of the issue. In some cases it appears that the doubts of the skeptics were well advised, and paraphysics has benefited from that discovery.

(U) Unfortunately, the battle is not fought purely in the realm of ideas. In the modern world, scientific progress is closely tied to resources, and competition can be fierce. Since those resources are largely controlled by the scientific and political establishment, opposition from respected members of that establishment can have serious effect. Consequently, with both money and established reputations at stake, paraphysics appears to have had considerable difficulty establishing a position within the scientific community in the USSR.

c. Religious Considerations (U)

(U) By some interpretations, the domain of paraphysics intersects in large measure with that of religion. On one hand, the appearance of a "supernatural" quality to some of the claimed phenomena has led some critics to conclude that belief in paranormal phenomena necessarily lead to acceptance of such religious concepts as a "soul" or of extra-physical entities such as spirits. For the officially atheist political and scientific community of the Soviet Union, that perception mandates opposition to paraphysics. On the other hand, religious believers have also sometimes had difficulty accepting the legitimacy of paraphysics, since many of the phenomena subtended by paraphysics have historically been linked to the forces of evil, or the devil. Thus, for both believer and nonbeliever alike, paraphysics has raised philosophical questions which have stood in the way of its acceptance.

(U) Although paraphysics phenomena are amenable to explanation by models with religious content, they by no means necessarily must be explained on that basis. There is a recurrent tendency in the Soviet Union and elsewhere for the results of paraphysics research to be vested with religious or mystical significance, or explained in terms which relate to religious or mystical concepts.

To the degree that this is true, support for paraphysics in the scientific and political systems is undermined. Because of this fact and the problems of ideology mentioned earlier, paraphysics researchers have found it necessary to spend inordinate effort explaining their studies in terms of philosophically neutral concepts.

d. Popular Preconceptions (U)

(U) The Russian people have an ancient and deep preoccupation with mysticism and the occult which persists to the present day. Despite the conscious attempt of the regime to debunk such things, there are still frequent articles in the popular press which indicate that there is a healthy interest in the occult, especially in the rural areas.

(U) Even the more pragmatic Germans are subject to the same interests. An East German medical doctor indicated that in his country, "the current cultural level appears to be a fine layer, under which mysterious sciences and magic of past centuries and thousands of years are awaiting the occasion to break through this layer, in order to come to the surface. We have here not only sorcerers; we also have astrologists, magicians, spirits, religious fanatics, amateur homeopaths, clairvoyants and chiromancers."[6] All of these exist alongside the official atheist, materialist philosophy, and have their effect upon the popular mind.

(U) The ancient traditions and belief in the occult are passed down by word of mouth from generation to generation, outside the formal communications channels controlled by the government. Apparently, one of the factors contributing to the publication of data on paraphysics in official Soviet journals is an attempt by the government to gain some measure of control over the situation. By channelling potentially dangerous, idealistic and spiritual popular beliefs into officially sanctioned channels, the government can in some measure defuse those beliefs. By presenting paraphysics research in scientific and philosophically neutral terms, the mysticism which supports belief in the occult can to some degree be undermined. The government, therefore, has an interest in publicizing paraphysics research, if it is properly presented.

(U) Proper presentation, however, is by no means assured. Writers in the Soviet popular press often have a tendency to draw unwarranted implications from scientific data and to sensationalize the findings and research of paraphysicists in ways that lead to popular misconceptions about the scope and import of paraphysics research. The situation is sometimes aggravated by members of the paraphysics community, who are on occasion less than modest in their claims.

(U) Some of the more responsible members of the Soviet press recognize the problem, and there have been attempts to restrain those guilty of improper popularization and unwarranted association of scientific results with idealistic concepts. For example, in an article in the semiprofessional magazine *Zhurnalist*, one member of the fraternity first defends some of the scientific findings of paraphysics, and then rebukes his fellows for their treatment of them in the popular media: "New facts and phenomena, however unexpected and strange they may be, are not hostile to materialism; rather the idealistic speculation in them, and the idealistic treatment of them are."[7]

(U) There have been a number of cases in the Soviet Union where scientific research, as reported in the popular press, has been presented in a highly sensational manner. A number of serious researchers have suffered as a result and have since learned to be highly circumspect in their open reports of their efforts. In order to avoid unwelcome publicity associating their efforts with potentially dangerous concept, many researchers have opted for an extremely low public profile. An excellent example would seem to be I. M. Kogan, whose Bioinformation Section of the Popov Society has openly been doing research into telepathy for over a decade, and yet has not published any research results since 1970.

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e. Nationalism (U)

(U) To some degree, paraphysics research and certain applications are subject to the influence of nationalism. The most obvious example is Kirlian photography, which was "invented" in 1939 by Semen and Valentina Kirlian in Krasnodar. The process is directly derivative of a static discharge photographic technique that had been used in the West since before the turn of the century. However, when the Kirlians adapted the process to use a high-frequency field, it was unquestionably a large qualitative advance, and the Kirlians have since achieved considerable prestige in the Soviet Union. Despite the recent finding by a team of US researchers that Kirlian photography is entirely explainable on the basis of corona discharge, and varies with moisture content of the subject, the Soviet Union has continued to make extravagant claims for the process.

(U) An even better example of the demands of nationalism is acupuncture. During the late 1950's and early 1960's, Soviet physicians who had studied in China returned with knowledge of acupuncture techniques and spread their knowledge throughout the Soviet Union. During this period, acupuncture came into widespread use in medical clinics in the Soviet Union, even reaching the status of a medical fad.

(U) With the rupture in political relations between the Soviet Union and China, however, all that changed. Acupuncture was a Chinese invention; and as political relations with China deteriorated, use of acupuncture declined precipitously. By the mid-1960's, there were no formal training programs in acupuncture in the Soviet Union, and its use in clinics was very limited.

(U) The situation reversed itself once again only a few years later. In the late 1960's, a research team at Kazakh State University in Alma-Ata discovered that acupuncture points could be stimulated by laser light, with effects apparently even more beneficial than from the traditional stimulation with needles. Almost concurrently, a Moscow physicist invented an electronic device to measure skin resistance and discovered that there was a very high correlation between acupuncture points and areas of anomalous skin resistance. Using the device (the tobiscope), the number of acupuncture points was found to be considerably greater than that traditionally used by the Chinese.

(U) The political point was even more important than the scientific one. Using an advance in technology, the Soviet Union had in only a few years added greatly (by their own assessment) to the knowledge of acupuncture points and therapy. Far from being a political embarrassment, acupuncture now has the status of a home-grown invention in the Soviet Union, at least when used with laser stimulation, and its uses and official support for research are growing rapidly there.

2. Perceived Threat from the West (U)

(U) Like other areas of applied technology which may have military application, Soviet perceptions of Western research and development status have considerable impact on the level of official support given to paraphysics research. The original impetus for the Soviet government to establish Vasil'yev's laboratory at Leningrad State University seems to have been the common belief that the US Navy had conducted successful experiments in telepathy with a submerged submarine (the Nautilus experiments). Certainly Vasil'yev himself made several pointed references to that supposed test in his works, even though it has been claimed that he later recognized them as a hoax.*

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(U) It should be pointed out that some members of the paraphysics community and perhaps some government officials still seem to accept the Nautilus experiments as fact. In 1972, for instance, a Romanian scientist writing in a semiprofessional scientific journal referred to the experiments as factual.

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(U) It should also be noted that the Soviet government's official interest in paraphysics carries certain other risks in the international arena. The Chinese have used paraphysics research in a virulent propaganda attack against the Soviet Union, claiming that government interest was a reflection of the need of the revisionist regime for internal supports and an indicator of the departure of the Soviet regime from the paths of Leninist doctrine.[8] While it is unclear that this avenue of attack has had any noticeable effect on international affairs, paraphysics now has been identified as a potential propaganda weapon.

3. Organizational Politics (U)

(U) Paraphysics, as has already been noted, has severe image problems. Aside from its controversial position within the scientific community, it is a subject with high emotional content and frequent, unfortunate association with charlatans and opportunists. Because of this, among its detractors (and those personal neutrals who wish to look good to its detractors) paraphysics research has been referred to by some critics in the US as a "high giggle factor." In the bureaucratic scientific structure of the Soviet Union, this orientation causes a systemic negative bias toward paraphysics research which exceeds the actual personal convictions of the decision-makers themselves. Managers at lower and middle level periodically crack down on low-level or unofficial involvement in paraphysics research on their own initiative, in order to look good for the higher level bosses, often without any indication that such actions actually reflect the desires of the higher levels. The tendency toward timidity in the face of perceived risk is always safer and more likely in a bureaucratic organization, and this cannot but have an effect on paraphysics.

4. Net Assessment (U)

(U) In the Warsaw Pact countries, paraphysics (and the other sciences) is under the control of the Communist Party, which supervises award of all advanced degrees, appointments to administrative posts, distribution of material resources, and access to publication media. In addition to party control, paraphysics is heavily influenced by prevailing popular attitudes, and personal and organizational pressures within the scientific community which severely constrain its activities.

(U) Such constraints are not absolute. The nature of paraphysics research is such that much personal research can take place without formal approval. From time to time, the perceptions of the decision-makers are relaxed to the point that support (or toleration) for paraphysics research and publication about such research increase. Indeed, there are valid reasons why the Soviet government should approve some measure of such research and publicity. However, such approval tends to be cyclical in nature. Publication of popular articles about paraphysics can lead to dangerous exaggerations by the press, and further exaggerations of the significance in the popular mind. Research discoveries, while scientifically significant and theoretically stimulating, can be less reliable than

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hoped for by the pragmatic bureaucrat, who is more interested in the solution of practical problems than in the demonstration of theoretically significant results. There is a strong demand for paraphysics, like the other sciences, to demonstrate practical utility despite its status as a newly emerging and immature scientific discipline.

(U) When the premature hopes of the bureaucrats are unrewarded and the excesses of the press lead to undesirable public reaction, there is a tendency for official support to strongly diminish. Such periods can be of varying length. The entire mid- to late-Stalinist period was one such time of official discouragement of paraphysics; another occurred in the mid- to late-1960's.

(U) It appears that paraphysics is again achieving something of a renaissance in the Soviet Union and the other Warsaw Pact countries. Since the beginning of this decade, official support for and interest in paraphysics research appear to have steadily increased. The cyclic nature of such support probably will continue: it is highly likely that the more controversial paraphysics research areas in the Warsaw Pact countries will experience periods of rapid advance as well as some recession in terms of its official position over several-year intervals. However, with each such period of advance, the number of interested scientists grows larger, and the body of accumulated scientific data of paraphysics grows ever larger.

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SECTION VII

LEVEL OF RESEARCH EFFORT—QUANTITATIVE MEASURES (U)

1. Barriers to Assessment (U)

(U) In assessing an area of foreign scientific or R&D work, it is common to attempt to estimate any of several quantitative indicators. Such variables as budget, number or size of facilities, number of patents granted, number of technical publications in the field, number of personnel or professionals in the field, and number of students enrolled in educational programs relevant to the field are among the indicators customarily employed. Such indicators, properly used, can provide valuable insight into the relative priority enjoyed by the field, areas of probable strength and weakness, and eventually, changes in research priorities between competing areas of scientific endeavor.

(U) There are many unique aspects of paraphysics research which make such quantitative measures singularly uninformative. In most areas of paraphysics, there are no established, universally accepted, scientific paradigms. The very nature of the subject makes many of the standard procedures of scientific inquiry inappropriate and, at the same time, legitimately encourages approaches not normally countenanced by the scientific community. As a result, there are no established educational paths to paraphysics research.* Scientists from virtually all fields and, indeed, some persons with little scientific training, can achieve recognition in paraphysics. Although the most advanced laboratory test equipment has been used, from time to time, in paraphysics experiments, tens of thousands of experiments have been carried out worldwide with little or no equipment of any kind. Unlike most other areas of science, it cannot be safely assumed that a prominent researcher in paraphysics necessarily has invested a large amount of time or resources in research. For many, probably most, persons involved in paraphysics, it is only vocation or hobby.

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*(U) It should be noted that at least one Polish student was apparently granted a Doctor's degree in physics with a study of the physical problems of telepathy in 1959.

**(U) Researchers in paraphysics have access to the material because of a wide variety of types of scientific facilities. See Table II.

TABLE I

ACADEMIC SPECIALTY OF PARAPHYSICS RESEARCHERS—PRIME AREAS (U)

	TELEPATHY/ CLAIRVOYANCE	BPE/SIR*	DERMAL VISION	BIO-ENERGETIC	PSYCHO-KINESIS	PSYCHIC HEALING	PRE-COGNITION
Medicine	5	4	10	5	2	3	
Psychology/Pedagogy	11		5	2	3	1	
Engineering	9	5	1	2	2	2	
Physics/Mathematics	7	1	2	4	2		1
Geology/Mining		12					
Biology	5		1	3	1		
Biophysics	3		1	1			
Biochemistry	1	1		2			
Architecture		4					
Astronomy	2			1			
Physiology	1		2				
Chemistry	1		2				
Sociology	1				1		
Toxicology	1						
Law/Criminology	1						
Art	1						
Entomology	1						
Archaeology		1					

*Biophysical Effect/Subliminal Ideomotor Response.

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TABLE II

TYPE OF FACILITY HOUSING RESEARCH—PRIME AREAS (U)

	TELEPATHY/ CLAIRVOYANCE	BPE/SIR*	DERMAL VISION	BIO-ENERGETIC	PSYCHO-KINESIS	PSYCHIC HEALING	PRE-COGNITION
Medicine	9	3	8	5	3	1	
University	4	4	3	4	2		1
Psychology/Pedagogy	3	1	5	3	2		
Physics/Engineering	6		2	2	1		1
Geology/Mining	1	4	1		1		
Observatory	1			1			
Cybernetics	1		1				
Law	1						
Art	1						
Metrology					1		
Chemical Engineering		1					

*Biophysical Effect/Subliminal Ideomotor Response.

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(U) Since quantitative measures of personnel, facilities, and budget are frequently reported both in the popular press and in the intelligence community, and it appears that many of these reports are misleading or inaccurate, this study will address these issues briefly. However, because of the above considerations, extreme caution must be exercised in this or other studies of Warsaw Pact paraphysics. The total research effort is probably much greater than that indicated by the official expenditures for personnel and equipment and much less than would seem apparent from the number of researchers and facilities reported.

2. Number of Paraphysics Researchers (U)

(U) As indicated above, there are serious problems in interpreting any single number cited for paraphysics researchers in the Warsaw Pact countries. After eliminating journalists, critics, stage performers and rural occultists, more than 657 persons have been identified as involved with paraphysics research in the Soviet Union and other Warsaw Pact countries. As outlined in the notes to Table III, a number of qualifications must be applied to the meaning of the numbers shown. In addition, it should also be noted that, in all probability, the numbers are still quite conservative.

(U) For instance, the two most prominent Soviet researchers in biophysical effect claim that there are some 40 groups in that field in the Soviet Union; to date only 17 have been identified. Biophysical effect research seems less likely to be kept secret than some other forms of paraphysics work. Therefore, if the ratio is similar in the other areas, it is quite possible that the numbers of groups shown in Table I should be raised by approximately a factor of two.

(U) If the numbers of groups are understated, it is even more likely that the number of persons in each group should be multiplied even more. For example, the Bioinformation Section of the All-Union Technical Society of Radio Technology and Communications imeni Popov (the Popov Society), which is primarily interested in telepathy and clairvoyance, is generally estimated to have some 300-500 members at any given time, and may have had thousands of persons attend meetings at one time or another. This study identifies only 17 persons as telepathy researchers associated with the Popov Society. The disparity between the two figures is not as great as it may seem, since most of the persons who attend meetings of the Popov Society are simply interested observers, who do little or no personal paraphysics research. Nonetheless, the larger number indicates the magnitude of interest in the field, and the number of persons who have taken part in experiments under the auspices of the Popov Society is likely to be considerably greater than 17. Similarly, even though research may be reported under only a single name, it is very likely that many of the facilities for which only one person is known have had a number of interested participants in their experiments. It is reasonable to infer that further research will identify a considerable number of additional paraphysics researchers in the Warsaw Pact countries.

*(U) See the section on Ideology for a more complete discussion of governmental attitude and press reportage of paraphysics research and phenomena. See Appendix III, Methodological Problems, for a more complete treatment of some of the pitfalls in analyzing reports on paraphysics in the Warsaw Pact countries.

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TABLE III

NUMBER OF CITIES, FACILITIES, AND PERSONALITIES INVOLVED IN PARAPHYSICS RESEARCH--WARSAW PACT (U)

	CITIES	FACILITIES	PERSONS
Prime Areas			
Telepathy/Clairvoyance	21	44	111
Biophysical Effect/Subliminal Response	15	25	63
Dermal Vision	12	24	58
Bioenergetics/Bioplasma	13	23	48
Psychokinesis	9	17	19
Psychic Healing	7	8	13
Precognition	2	3	3
Areas			
Magnetic Field Effects	25	51	126
Electromagnetic Field/Wave Effects	20	43	119
Heliobiology	17	48	85
Autogenic Training/Biofeedback	15	37	61
Kirlian Photography	14	24	54
Bioluminescence	13	20	39
Hypnotism/Hypnopedia	12	20	29
Acupuncture	6	12	18
Biorhythm	4	8	7
Biogravity	1	1	3
Total	75	213	657

(UNCLASSIFIED)

1. (U) Because of the nature of paraphysics research in the Soviet Union and the available data about it, there are certain caveats that must be applied to the figure shown in Table I. First, the data include all persons known to have been active in paraphysics research since the Communist revolution in the Soviet Union. Although the vast majority of these persons have been active in the modern period (post-1959), it was felt advisable to report the others as well. There is a very strong tendency in the Soviet Union for a research area, once begun, to continue at the same place for an extended period of time. Hence, even in the cases where a researcher is known to have died or retired, the data are reported on the theory that others are carrying on the work in some form at the same facility.*

2. (U) Many researchers are active in more than one area of paraphysics research. The data presented by area make no attempt to avoid double-counting in this respect. As a result, the total shown is not the sum of the entries for each area, since the total does eliminate double counting.

3. (U) There has been a conscious attempt to eliminate writers in the field of paraphysics who are not themselves serious researchers. Those who are known to be journalists, stage performers, or common practitioners (such as in psychic healing) are not reported, when they can be discerned as such. However, since much of the data comes from popular press articles, it is often difficult to determine the exact status of the author. Within this constraint, however, it is safe to consider the great majority of the persons represented in this table as having advanced degrees, and most of the remainder as being graduate students. The level of professional training represented by the persons referred to in Table I is therefore quite high.

4. (U) Although once his professional career has begun, it is unusual for a researcher to sever connections with a research institute and start anew at another, it is not uncommon for a researcher to be active in more than one facility. In these instances, each facility is represented in the data, but the person is not counted twice.

5. (U) Much of the data is derived from popular press articles, which often do not name all researchers in a project nor disclose the total staff size. Typically, only the name of the team leader will be printed. Consequently, in many cases, the one name will represent a much larger team. As a result, the number of persons active in paraphysics research in each field must be considered a conservative estimate.

6. (U) There is no intent to imply that each of the persons represented in the data is involved in full-time research in paraphysics. In fact, that is probably the case for only a relatively small minority of researchers. For most of the persons, especially in the prime areas, paraphysics is only a small, usually unofficial interest. (See the discussion in the text for an expansion of this point.)

*(U) This theory is supported by the data. There are 13 researchers who were active in paraphysics research prior to 1959, whose institutional affiliation is known (average year of last known activity:1939). In all 13 cases, it is known that at least one other worker was active in the same field in the modern (post-1959) period at that facility. In two of the cases, a researcher was active in a primary and a secondary field; in both cases, work in the primary field was known to be continuing at that facility, while there was no direct evidence of a continuing effort in the secondary field.

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3. Facilities Housing Paraphysics Research (U)

(U) The entries in Table III indicate the number of facilities with which researchers in each of the various paraphysics fields are known to be associated. It should be noted that most of these facilities do not appear to have either a formal program of paraphysics research, or a well-organized empirical research group established on an informal basis. Table IV indicates those facilities in which it appears that a serious, organized, empirical research program has been undertaken in modern (post-1959) times in the prime paraphysics areas. Clearly, they are a much smaller number. Even most of these probably do not reflect a formal, government-sponsored research program into the area.

4. Government Support for Paraphysics Research (U)

(U) It is usual for Westerners who have visited Soviet paraphysics researchers to return with stories of official government support for such research. In fact, such support seems unquestioned by anyone: "The United States and the Soviet Union each have about six major centers for parapsychological research and about a dozen minor ones. All of the Soviet centers, of course, are government-funded." (1971)[1] "Formal, officially-subsidized research in the field has gone on for years, sometimes publicly vaunted and at other times denounced and even denied." (1977)[2]

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(U) Neither are such reports in the popular press shy about assigning specific numbers to the level of government funding. In one form or another, the estimate of 12-20 million rubles (or dollars) has survived for at least the last decade and recurs as a current estimate routinely, despite the fact that no one knows, or is saying, how it was originally derived.[3] In its report on Soviet government funding for paraphysics research, the RAND Corporation found that available knowledge of the level of Soviet involvement in paraphysics provides "prima facie evidence that the figure of 12 to 20 million rubles is, if anything, grossly inflated."[4] Although the present study identifies a considerably larger number of persons in the Soviet Union and Warsaw Pact countries than were known to the RAND analysts, there is as yet no reason to disagree with their assessment.

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[1](U) It has become apparent that extreme care must be exercised in evaluating anything that is said by Naumov and his coterie. Although Naumov has achieved a position of high visibility for his diligent espousal of the cause of paraphysics, his technical credentials and respect for strict truth and balance in his statements remain extremely doubtful.

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TABLE IV

MOST IMPORTANT RESEARCH FACILITIES—PRIME PARAPHYSICS AREAS (U)

	LOCATION
Telepathy/Clairvoyance	
Institute of Problems of Information Transmission	Moscow
All-Union Technical Society of Radio Technology	Moscow
Institute of Psychology, APS, RSFSR	Moscow
Leningrad State University	Leningrad
Brain Institute imeni Bekhterev	Leningrad
Institute of Psychology	Kiev
Institute of Suggestology	Sofia, Bulgaria
Biophysical Effect/Subliminal Response	
VNII of Hydrology and Engineering Geology	Moscow
Interdepartmental Commission for BPE	Moscow
VNII of Prospecting Geophysics	Leningrad
Center for Hygiene and Public Health	Timisoara, Romania
Labor Protection Center	Bucharest, Romania
Dermal Vision	
Institute of Problems of Information Transmission	Moscow
Institute of Normal and Pathological Physiology	Moscow
VNII of Railroad Hygiene	Moscow
Sverdlovsk State Pedagogical Institute	Sverdlovsk
Kazakh State University imeni Kirov	Alma-Ata
Nizhniy Tagil State Pedagogical Institute	Nizhniy Tagil
Bioenergetics/Bioplasma	
Leningrad State University	Leningrad
Kazkh State University imeni Kirov	Alma-Ata
Institute of Clinical and Experimental Medicine	Novosibirsk
Psychokinesis	
Institute of Psychology, APS, RSFSR	Moscow
Leningrad State University	Leningrad
Psychic Healing	
Unknown Facility	Tblisi
Precognition	
None	

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NOTE:
Classification of a facility as one of the "most important" implies only that it is known that serious empirical research in the field has been undertaken there, over a span of several years, by more than one researcher with good professional qualifications. There is no intent to suggest that all, or even most, of these facilities are staffed by full-time professionals working in prime paraphysics areas nor that there is necessarily any official government support for such work at these facilities. However, it is reasonable to assume that researchers would have the full range of technical expertise and equipment at their facility available to them at least for part-time consultation and use.

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the available data that any analyst or reporter can exercise his preconceptions rather freely without fear of convincing refutation. Careful reading of intelligence reports and studies can usually allow the reader to infer the preconceptions of the writer and thus balance his judgments accordingly. Nonetheless, there do not appear to be any clear, provable conclusions that can be drawn with respect to Soviet secret paraphysics installations and funding.

(U) With the above considerations in mind, the following represents the best current judgment on the state of Soviet closed research in paraphysics and the probable degree of official funding associated with that research.

a. Leningrad State University (U)

[redacted]

b. Bioinformation Section of the Popov Society (U)

[redacted]

c. Ukhtomskii Physiological Institute* (U)

(U) G. A. Sergeyev, at the Ukhtomskii Physiological Institute in Leningrad, has been active in various paraphysics research since the early 1960's. Some of his work involves development of instrumentation to measure weak electric, magnetic or electromagnetic fields that are associated with normal and abnormal physiological or psychological states, including psychokinetic phenomena. His work also includes study of influences of such fields on material and biological samples and on people; he has investigated information properties of EEG data, he has conducted telepathy experiments, and he has proposed various theoretical models to explain paranormal phenomena. It is not known if this research has the official backing of his laboratory or has any government support. However, it is very likely that he uses facilities at the laboratory for some of his experiments.

*(U) Ukhtomskii Physiological Institute is subordinate to Leningrad University.

[redacted]

d. Institute of Psychology (U)

[redacted]

[redacted]

g. Kazakh State University, Alma-Ata (U)

(U) In all probability, the largest center for paraphysics research in the Soviet Union is located at the Kazakh State University imeni Kirov in Alma-Ata. At least 20 researchers there are known to have investigated a wide range of paraphysics topics, and the number of researchers is probably considerably larger. Although the major emphasis appears to be on bioenergetics, bioplasma, Kirlian photography, autogenic training, and dermal optics, there is also some evidence of research in telepathy and the related disciplines of bioluminescence, magnetic and electromagnetic wave and field effects on organisms. The research is certainly interdisciplinary in scope, although it appears to be generally coordinated by Doctor of Biological Sciences Viktor Mikhaylovich Invushin, head of the Chair of Biocybernetics. As nearly as can be determined, an entire faculty of the university is involved in one aspect or another of paraphysics research, including both staff and graduate students. The facility is sufficiently prestigious to have attracted other well-known researchers, such as Aleksandr Semenovich Romen and the Kirlians, to work with it on a temporary basis. In addition, the university has sponsored several all-union conferences on various aspects of paraphysics, attracting researchers from throughout the Soviet Union and elsewhere.

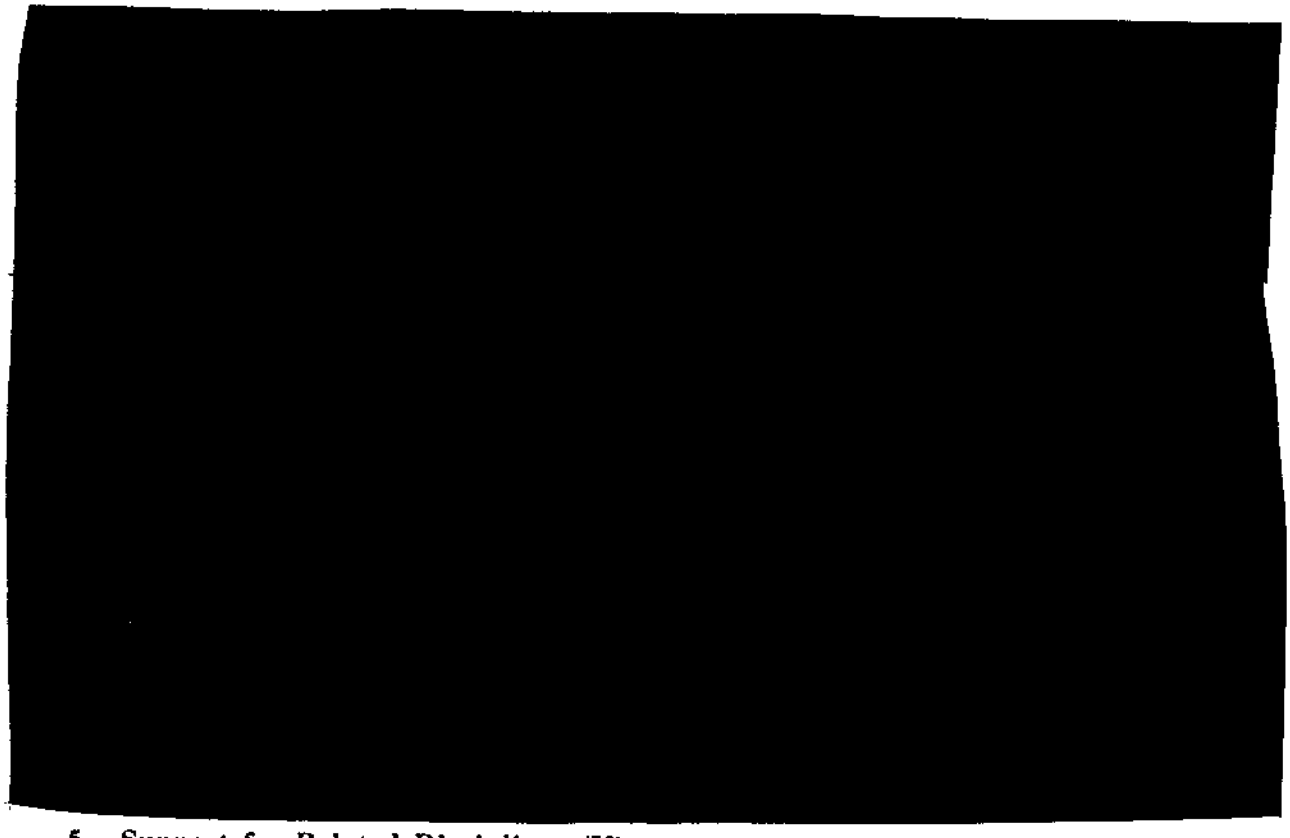
[redacted]

h. Institute of Automation and Electrometry, Novosibirsk (U)

[redacted]

*(U) In 1974 there were more than one thousand scientific research institutes and problem and branch laboratories attached to higher educational institutions. The total budget for contract research done by these facilities exceeded 500 million rubles in 1972.[1]

[redacted]



5. Support for Related Disciplines (U)

(U) In addition to the rather limited official support given to the more central areas of paraphysics, the Soviet government is known to have approved research in a number of related disciplines with relatively high emphasis in some cases. There are hundreds of researchers, many of them full-time, doing work on the effects of magnetic and electromagnetic field and wave effects on an organism. While these might be properly considered as areas of conventional biophysics, this study has shown a high degree of relevance between electromagnetic and magnetic effects and the primary paraphysics areas.**

(U) Acupuncture is another field in which there has been recent official interest with relatively high level support. Some Soviet medical clinics have used acupuncture since at least the late 1950's, and there are now several institutions in the Soviet Union formally chartered to do research in acupuncture. At least two such facilities have been opened as recently as 1977.***

(U) Another field which has practical application is autogenic training, and there are a large number of institutes formally chartered to study it. The significance of autogenic training is not lost on the military; one of the major research centers for autogenic training is the Military-Medical Academy imeni Kirov, where application of the technique to battlefield conditions is studied by military surgeons.

*(U) For a more complete explanation of this problem, see Appendix III.
**(U) This study has identified 57 researchers in electromagnetic wave/field and magnetic field research who are also active in at least one other area of paraphysics research.
***(U) The Central Scientific Research Institute of Reflexotherapy, opened on 4 March 1977, and the Laboratory of Laser Acupuncture Therapy of the Kharkov Medical Institute, opened in July 1977.

[redacted]

6. Summary of Governmental Support (U)

(U) Official support for paraphysics in the Soviet Union and Warsaw Pact countries is highly variable over time, and changes markedly in response to changes in the political and scientific environment, as well as to Soviet perceptions of the corresponding degree of official support for paraphysics in the West. Although it is clear that there is at least some official support on a high-risk basis for paraphysics, the current magnitude of such research in the Soviet Union probably does exceed a few hundred thousand rubles annually in the prime areas. The total subvention of research in the related areas of paraphysics/biophysics is somewhat greater, but the total research effort in all such fields appears never to have reached the inflated levels sometimes claimed for them.

[redacted]

SECTION VIII

SUMMARY AND CONCLUSIONS (U)

1. Paranormal Processes (U)

a. Qualifiers (U)

[redacted]

(U) An in-depth review of worldwide research was also accomplished to assist in the evaluation of reported Warsaw Pact data. However, most of this worldwide data is not directly applicable since it usually involves people who are not as capable in paranormal performance as those involved in Warsaw Pact experiments. Subsequent consultations with US researchers have also provided additional insight. At a minimum, it does appear that sufficient positive evidence has been reported to warrant further study of such phenomena. Some experimental results indicate that specific applications are possible, although data reliability and accuracy remain as issues. It is also recognized that diverse opinions exist regarding this area of investigation and that some do not accept the phenomena as valid.

(U) In view of these considerations and constraints, this section contains best estimates of the significance of Warsaw Pact research on paranormal processes. Although Warsaw Pact data on this research are very limited, some of the reported experiments are highly significant.

b. Significance of Research (U)

(1) Communication (U)

(U) Paranormal communication potential has already been demonstrated by USSR researchers. The experiments performed by Kogan's group in 1967 with single digits are the most statistically significant ever reported. In this experiment, 105 of 135 random-selected digits from 0 to 9 were correctly identified by a remote person (receiver). Kogan's experiments with simple objects, especially the long-distance experiments (up to 3,000 km), are also noteworthy. Other Warsaw Pact experiments have investigated communication potential, but their results are not as significant.

(U) Communication application is a known USSR research goal, and additional research toward this goal is known to have occurred during the past decade. It is also known that gifted people are identified from the general population and that training techniques are pursued for enhancing paranormal perception. Additional experiments with improvements in reliability and diversity as a goal have probably been accomplished.

(U) Specific experiments can be expected in the near future (if not already accomplished) from submarines, space, or command and control locations to demonstrate practical use. Initial experiments would probably involve simple code techniques but could eventually be more comprehensive.

[redacted]

(U) There are no data of any investigation into energetic-type interactions that appear to cause significant effects on material properties or configuration (i.e., the "Geller" effect), although such research could occur should appropriate people become available.

[redacted]

(U) Another energetic interaction effect noted by a few researchers is the apparent ability of some people with paranormal aptitude to influence photographic film. Most reported effects are non-specific; however, some research (in Perm) indicates specific images are also possible. This research cannot be evaluated at this time due to uncertainties in reported experimental procedure and small number of experiments. Similar effects have, at times, been reported by researchers in the West. If these effects prove to be valid, this interaction mechanism would be of high significance and would provide numerous research and application options. It is known USSR researchers have been interested in this type of interaction since the early 1960's.

(U) People with energetic-type paranormal abilities have been observed to influence biological specimens and to induce specified physiological influences on other people. In one of Sergeyev's experiments, a frog heart (in solution) showed a change in rate consistent with the intended action. In another experiment, a nearby target person's heart rate increased (as intended) and may have reached unstable levels of functioning. Correlations between several physiological parameters were also noted between the person intending the response and the target person. Such effects might be due to combinations of weak induced fields, paranormal communications, or other factors. This work by Sergeyev appears reliable and is consistent with results noted by some Western researchers.

[redacted]

2. Other Paraphysics Topics (U)

(U) Warsaw Pact researchers are investigating a variety of biological sensitivities to electric and magnetic fields. For example, frequencies in the radio range have been noted to affect human EEG responses; magnetic field sensitivities have been noted in people and animals; laser stimulation of certain skin areas is used for therapeutic effects; muscle tension creates VHF frequencies that can be detected by others; dowsers have responded to artificial magnetic fields and to muscle tension in other people.

(U) These and other related paraphysics research areas may add insight into a wide range of human sensitivities and responses and could assist in explaining paranormal perception (ESP). This research could lead to development of methods for enhancing certain sensitivities, or could also lead to applications in certain warfare roles.

[redacted]

(U) A goal of Warsaw Pact paraphysics research is to demonstrate a physical basis for a wide variety of known unusual sensitivities. As such mechanisms are better understood, particular applications of certain sensitivities would probably increase. For example, should dowsing be eventually proven to be due to certain human electromagnetic sensitivities, additional practical use of dowsers would probably occur. At the present time, there are reported to be over 40 "unofficial" groups using the "biophysical method" working throughout the USSR on various mineral exploration and geological problems.

[redacted]

3. Research Environment (U)

[redacted]

(U) Scope of research in paranormal phenomena in other Warsaw Pact countries is not as extensive or as credible as in the USSR. However, trends have been noted that indicate a growing interest that will probably lead to new research efforts there as well.

[redacted]

(U) Reluctance of researchers to publish and the general low quality of some of the published research have been apparent. This may be in part due to pressures in the Soviet system and lack of publishing opportunities. Some of the established researchers may not wish to release research results to popular magazines or to submit papers to some journals available in this research that are very diverse or nonselective in type of papers accepted.

(U) Although such research is receiving growing acceptance and support, it must be recognized significant applications or breakthroughs do not necessarily require large facilities or groups. Therefore, assessing actual achievements will remain as a serious intelligence problem. Achievements in theoretical understanding would probably require considerable equipment and a large multidisciplinary research staff.

[redacted]

APPENDIX I

PERSONALITIES AND FACILITIES ASSOCIATED WITH PARAPHYSICS (U)

(U) The data contained in Annexes A and B comprise persons and facilities that have been identified to date as being involved in paraphysics research. A conscious effort has been made to exclude those whose interest is purely journalistic and those who are simply practitioners of one or more of the various paraphysics skills, such as stage performers and healers, unless they are known to be associated with a research project.

(U) Where known, the academic specialty and degree level of the person are indicated. While in most cases these are unknown, it is likely that the vast majority of the persons included in this appendix posses professional degrees and that a very high percentage possess an advanced degree.

(U) The facilities shown are those with which the person indicated is known to be associated. The fact of such association, however, does not necessarily mean that the facility itself is in any way formally associated with paraphysics research.

(U) Definitions of terms and abbreviations used in this Appendix are as follows:

Inst: Institute

Imeni: Named in Honor of . . .

NII: Scientific Research Institute (Nauchno-issledovate'nyy Institut)

VNII: All-Union Scientific Research Institute

Candidate: Roughly equivalent to Ph.D. degree

Doctor: Honorary degree granted to mature scientists who have made substantial contributions to science or technology. No US equivalent.

The date indicated is the last year the person is known to have been active.

ANNEX A

PERSONALITIES AND FACILITIES—PRIME PARAPHYSICS AREAS (U)

	Page No.
Telepathy/Clairvoyance (U)	65
Biophysical Effect/Subliminal Response (U)	71
Dermal Vision (U)	75
Bioenergetics/Bioplasma (U)	77
Psychokinesis (U)	80
Psychic Healing (U)	81
Precognition (U)	82

TELEPATHY/CLAIRVOYANCE

MOSCOW

MOSCOW STATE UNIVERSITY

KOBOZEV N I (CANDIDATE PHYS/MATH)	1971
PUSHKIN VEN'YAMIN NOYEVICH (DOCTOR PSYCH/PEDAGOGY ACADEMICIAN)	1974

INST OF PROBLEMS OF INFORMATION TRANSMISSION

BONGARD M M (CANDIDATE PHYS/MATH)	1971
MIRZALIS I V	1962
MIRZA DMITRI GRIGOR'YEVICH (DOCTOR PSYCH/PEDAGOGY)	1969
KISILOVA TAMARA ALEKSANDROVNA	1974
GELLERSHTEYN SIMON GRIGOR'YEVICH (DOCTOR BIOLOGY)	1968
PETRUSHINSKIY VYACHISLAV VYACH/ICH	1966
ZAYDENMAN I	1967
SMIRNOV MIKHAIL SERGEYEVICH (CANDIDATE PHYS/MATH)	1972

ALL-UNION TECHNICAL SOCIETY OF RADIO TECHNOLOGY AND COMMUNICATIONS

GELLERSHTEYN SIMON GRIGOR'YEVICH (DOCTOR BIOLOGY)	1968
FIDEL'MAN VLADIMIR YE (ASPIRANT ENGINEERING)	1970
KOGAN IPPOLIT MOSIEYEVICH (DOCTOR ENGINEERING)	1977
BULAVIN G I	1970
NAUMOV EDUARD K	1977
BOGATYREV V A	1970
ARLASHIN A G	1967
NIKOLAYEV KARL NIKOLAYEVICH	1966
KAMENSKIY YURIY I (CANDIDATE BIO-PHYSICS)	1975
IVANOVA M R	1970
GULEVSKIY V V	1970
SUKHAREBSKIY LAZAR M (DOCTOR PSYCH/PEDAGOGY PROFESSOR)	1966
POTEKHIN A YE (CANDIDATE ENGINEERING)	1966
RAYKOV VLADIMIR A (CANDIDATE PSYCH/PEDAGOGY)	1971
VALUS N A (PHYS/MATH)	
SMIRNOV MIKHAIL SERGEYEVICH (CANDIDATE PHYS/MATH)	1972

ACOUSTIC INST

OSHCHEPOV P K (DOCTOR ENGINEERING PROFESSOR)	1975

MOSCOW HIGHER TECHNICAL SCHOOL IMENI BAUMAN(MVTU)

KOGAN IPPOLIT MOSIEYEVICH (DOCTOR ENGINEERING) 1977

NII OF INTROSCOPY

OSHCHEPKOV P K (DOCTOR ENGINEERING PROFESSOR) 1975

MOSCOW AVIATION INST

ZIGEL'FELIKS U (DOCTOR ASTRONOMY) 1967

ALL-UNION EVENING INST OF MACHINE BUILDING

NAUMOV EDUARD K 1977

INST OF LAW

KUDRYAVISEV V (CANDIDATE LAW) 1969

CENTRAL CONTROL INST FOR MEDICAL-BIOLOGICAL PREPARATIONS IMENI TARASEVICH

NAUMOV EDUARD K 1977
PETUKHOV VALERIY GEORGIYEVICH (DOCTOR BIOLOGY) 1977

MOSCOW NATURE-EXPLORERS SOCIETY

VILENSKAYA LARISSA V (ENGINEERING) 1977

INST OF PSYCHOLOGY, RSFSR ACADEMY OF PEDAGOGICAL SCIENCES

PUSHKIN VEN'YANIM NOYEVICH (DOCTOR PSYCH/PEDAGOGY ACADEMICIAN) 1974

FACILITY UNKNOWN

MONIN ARKADIY I 1967
NAUMOV PAVEL (DOCTOR PSYCH/PEDAGOGY) 1968
MESSING VOLF G
YEFIMOV VASILIY VASIL'YEVICH (DOCTOR BIOLOGY PROFESSOR) 1977
YEVGRAFOV N A 1969

LENINGRAD

LENINGRAD STATE UNIVERSITY

PAVLOVA LYUTSIYA PETROVNA (DOCTOR PSYCH/PEDAGOGY)	1969
GULYAYEV PAVEL I (DOCTOR BIOLOGY)	1973
OSTROUMOV G A	1968
BEKHTEREV VM (DOCTOR BIOLOGY ACADEMICIAN)	1927
VALUS N A (PHYS/MATH)	
VASIL'YEV LEONID L (DOCTOR PHYSIOLOGY ACADEMICIAN)	1966

BRAIN INST IMENI BEKHTEREVA

IVANOV-SMOLENSKIY A G	1920
GULYAYEV PAVEL I (DOCTOR BIOLOGY)	1973
VASIL'YEV LENONID L (DOCTOR PHYSIOLOGY ACADEMICIAN)	1966

PUL'KOVO OBSERVATORY

KOZREV NIKOLAY A (DOCTOR ASTRONOMY PROFESSOR)	1972

IENINGRAD MEDICAL INST

SAPARMAMEDOV E (DOCTOR MEDICINE)	1975

ARTISTIC FUND OF THE RSFSR

SHMELEV IGOR PAVLOVICH	1977

FACILITY UNKNOWN

SHISHKIN IGOR FEDOROVICH (CANDIDATE PHYS/MATH)	1970

KIEV

INST OF PSYCHOLOGY

LEONTOVICH MIKHAIL ALEKSANDROVICH (ACADEMICIAN)	
LEONTOVICH ALEKSANDR VASIL'YEVICH (DOCTOR ACADEMICIAN)	1948
GUSKO ALEKSEY	1968

AIMA ATA

KAZAKH STATE UNIVERSITY IMENI KIROV

KULAGIN V V (ENGINEERING)	1970

TBLISI

INST OF CYBERNETICS

KHVEDELIDZE MORIS ARSENT'YEVICH (DOCTOR PHYS/MATH)	1967

NOVOSIBIRSK

NOVOSIBIRSK STATE MEDICAL INST

PASMAN A (ASPIRANT MEDICINE)	1975
SPERANSKIV S V (CANDIDATE TOXICOLOGY PROFESSOR)	1975

NOVOSIBIRSK MEDICAL INST OF AUTOMATION AND ELECTROMETRY

SHIERN AVGUST MIKHAILOVICH (CANDIDATE PSYCH/PEDAGOGY)	1969

ODESSA

FACILITY UNKNOWN

LUTSENKO U M	1908
SHAPOSHNIKOV A	1977
SUPRUNENKO TAT'YANA NIKOLAYEVNA	1962

TARTU

FACILITY UNKNOWN

PUMBILIA AVGUSTOVNA (DOCTOR)	1962

KARAGANDA

FACILITY UNKNOWN

KIRSNOVSKAYA IRINA NIKOLAYEVNA	1969

SARATOV

FACILITY UNKNOWN

SAFRONOV V V (DOCTOR)	1962

GESP HOSTIPAL

ZAVADA VALERTY

KARSAKPAI

FACILITY UNKNOWN

KUPRIYANOVA ANNA IVANOVNA (CANDIDATE PSYCH/PEDAGOGY)	1969

VIL'YANDI

FACILITY UNKNOWN

SOOMARE I	1973

UNKNOWN LOCATION, USSR

INST FOR THE RADIO TECHNICAL INDUSTRY

BERG A I (CANDIDATE ACADEMICIAN)	1967

VNII OF GEOPHYSICS

KAMENSKIY YURIY I (CANDIDATE BIO-PHYSICS)	1975

FACILITY UNKNOWN

MITSKEVICH A P	1968
FEIZOV E Z	1965
KAZHINSKIY BERNARD B (CANDIDATE PHYS/MATH)	1963
MARIKOVSKIY P I (ENTOMOLOGY PROFESSOR)	1970
FLEKSOR P	1920
MAKSIMOV A I	1972
NEFEDOV YU YA	
KABIKIN V YE	1968
KUNI MIKHAIL	
NIKOL'SKAYA YE G	1958
KERELOV S	1962
BELITSKIY G E	1944
ARKAD'YEV V K	1924
PARNOV YE (CANDIDATE ENGINEERING)	1966
KANTOROVICH M M	1963
LAZAREV P P (DOCTOR BIO-PHYSICS ACADEMICIAN)	1923
PETROVSKIY A A	1926
GURSHTEYN T V	1958
KOTIK NOME G (DOCTOR MEDICINE)	1912
STANESCU SORIN (DOCTOR)	1972
ZHUK YA N (CANDIDATE)	1902
TURLYGIN S YA (CANDIDATE PROFESSOR)	1943

ZHRAVLEVA G	1964
YERUKHIMOVKCH L	1964

PRAGUE

FACILITY UNKNOWN

NAKONECNY MILAN (CANDIDATE PSYCH/PEDAGOGY)	1977
CERNOUSEK M	1973
REJDAK ZDENEK (CANDIDATE SOCIOLOGY)	1975
DRBAL KAREL (ENGINEERING)	1973
MASOPUST VLADIMIR (ASPIRANT)	1971
SALABA JAN (PSYCH/PEDAGOGY)	1975
REZOK PETR	1973
SIGULA S	1975

CZECHOSLOVAK SCIENTIFIC AND TECHNICAL SOCIETY

DOSKOCIL I (ENGINEERING)	1973

HRADEC KRALOVE

FACILITY UNKNOWN

DROZEN VLEDIMIR	1975

UNKNOWN LOCATION, CZECHOSLOVAKIA

FACILITY UNKNOWN

FIGAR STEPAN (CANDIDATE)	1959
KAFKA BRETISLAV	1967

WARSAW

POLISH CYBERNETIC ASSOCIATION

BERNAT ANNA (CHEMISTRY)	1977

POLISH COPERNICAL SOCIETY

KLIMUSZKO CZESLAW ANDRZEJ	1977

SOFIA

INST OF SUGGESTOLOGY

LOZANOV GEORGIY K (DOCTOR MEDICINE, PROFESSOR)	1976

TIMISOARA

CENTER OF HYGINE AND PUBLIC HEALTH

MIKLOS JENO (CANDIDATE BIO-CHEMISTRY) 1976

INST OF PUBLIC HEALTH

DRAGENESCU GH E (CANDIDATE MEDICINE) 1977

LIPOVA

NUCET HOSPITAL

BARTHA CAROL (CANDIDATE PSYCH/PEDAGOGY 1977

BIOPHYSICAL EFFECT/SUBLIMINAL (IDEO) MOTOR ACTION

MOSCOW

MOSCOW STATE UNIVERSITY

OGIL'VI ALEKSANDR ALEKSANDROVICH (DOCTOR, GEO SCIENCES PROFESSOR) 1973

VNII HYDROLOGY AND ENGINEERING GEOLOGY

KONIN M F 1971
KONOVALOV G P 1971
MATVEYEV VALERIY SERGEYEVICH (CANDIDATE GEO SCIENCES) 1976
KURONOV V P 1971
TARAYEV B M (ASPIRANT ENGINEERING) 1944
SIMONOV YE V (ASPIRANT ENGINEERING) 1966
SOCHEVANOV NIKOLAY NIKOLAYEVICH (CANDIDATE GEO SCIENCES) 1976

VNII OF MINERAL RAW MATERIALS

SOCHEVANOV NIKOLAY NIKOLAYEVICH (CANDIDATE GEO SCIENCES) 1976

INTERDEPARTMENTAL COMMISION FOR THE BIOPHYSICAL EFFECT

PLUZHNIKOV ALEKSANDR IVANOVICH (CANDIDATE ENGINEERING)	1973
IVANOV N I (ARCHITECTURE)	1973
SVESHNIKOV N N (ARCHITECTURE)	1973
SOCHEVANOV NIKOLAY NIKOLAYEVICY (CANDIDATE GEO SCIENCES)	1976

INST OF PSYCHOLOGY, RSFSR ACADEMY OF PEDAGOGICAL SCIENCES

SUKOLOV ALEKSANDR NIKOLAYEVICH	1968

FACILITY UNKNOWN

KOSOVIETS YU G	1968
BONCH-BRUYEVICH V L (DOCTOR PHYS/MATH PROFESSOR	1962
MOREW YE I (ARCHAEOLOGY)	1973
MIKHAILOV V A	1973
SERGEYEV--MATVEYEV V (DOCTOR PROFESSOR)	1969
ROSSOV L K (ARCHITECTURE)	1973
ZAKHAROV A K (MEDICINE)	1973

LENINGRAD

LENINGRAD STATE UNIVERSITY

FRANTOV G S	1974

VNII OF PROSPECTING GEOPHYSICS

BOGOLYUBOV A N (DOCTOR ACADEMICIAN)	1972
GORBUNOV O D	1971
VOROSHILOV N A	1972

INST OF PHYSIOLOGY IMENI I.P. PAVLOVA

KUZMIN (CANDIDATE)	1969

KIEV

FACILITY UNKNOWN

KOSHKAROV N A	1916

UFA

FACILITY UNKNOWN

CHEKUNOV A (GEO SCIENCES)	1973

SVERDLOVSK

FACILITY UNKNOWN

MALAKHOV ANATOLITY ALEKSANDROVICH (CANDIDATE PROFESSOR) 1973

TASHKENT
TASHKENT STATE UNIVERSITY

BONDAREV B V 1970

KRASNOYARSK

FACILITY UNKNOWN

PROKHOROV VLADIMIR GEORG'YEVICH (CANDIDATE GEO SCIENCES) 1973

TOMSK

TOMSK POLITECHNICAL INST

BAKIROV ALEKSANDR GRIGOR'YEVICH (CANDIDATE GEO SCIENCES PROFESSOR) 1975

KISHINEV

INST OF ZOOLOGY

MARTS A M 1966
FEDORENKO N YE 1966

CHELYABINSK

CHELYABINSK HYDRAULIC ENGINEERING TRUST

INYUTIN IVAN PAVLOVICH (ASPIRANT GEO SCIENCES) 1975

FACILITY UNKNOWN

REFORMATSKIY V N (GEO SCIENCES) 1971
SYCH V K (GEO SCIENCES) 1971

UNKNOWN LOCATION, USSR

FACILITY UNKNOWN

BOGOMOLOV G (DOCTOR GEO SCIENCES PROFESSOR) 1944
BER N V 1971

BAZHENOV A S	1971
GRIGOR'YEV A M	1971
AGAFANOV G D	1971
BUROVA T A	1971
KAPACHAUSKAS V M	1971
LIPETSKIY V	1944
KEVKHISHVILI G I	1935
MEL'NIKOV YE K (GEO SCIENCES)	1971
FROLOVA S	1969
TOKAREV L	1969
VOLOKOV O	1970
VOLOSYUK G K	1967
VIKTOROV A (ASPIRANT)	1964

KUTNA HORA

DISTRICT INST OF PUBLIC HEALTH

BRADNA JIRI (CANDIDATE MEDICINE)	1977

CHEMICAL INDUSTRY PLANNING AND DESIGN ENTERPRISE

KADERAVEK MIRKO (ASPIRANT ENGINEERING)	1977

PRAGUE

FACILITY UNKNOWN

DRBAL KAREL (ENGINEERING)	1977
SVATOPLUK TABARA	1977

WARSAW

FACILITY UNKNOWN

URBANSKI ZENON	1977

TIMISOARA

FACILITY UNKNOWN

POPA VASILE STEFAN (ASPIRANT MEDICINE)	1977

CENTER OF HYGENE AND PUBLIC HEALTH

MOLDOVAN ION	1975
LEVIN SERGIU	1975
MAZO L YA	1975
MIKLOS JENO (CANDIDATE BIO-CHEMISTRY)	1976

BUCHAREST

CENTER FOR WORK HYGIENE AND PROTECTION

APOSTOL A	1976

LABOR PROTECTION AND HYGIENE CENTER

DUMITRESCU IOAN FLORIN (CANDIDATE MEDICINE)	1977

DERMAL VISION

MOSCOW
MOSCOW STATE UNIVERSITY
RUBIN A B (DOCTOR BIOLOGY) 1964

INST OF INDUSTRIAL HYGINE AND OCCUPATIONAL DISEASES
SNYAKIN PETR GRIGOR'YEVICH (DOCTOR MEDICINE PROFESSOR) 1974

INST OF PROBLEMS OF INFORMATION TRANSMISSION
KULESHOVA ROZA 1970
BONGARD M M (CANDIDATE PHYS/MATH) 1971
ROYAK A A (PSYCH/PEDAGOGY) 1968
SMIRNOV MIKHAIL SERGEYEVICH (CANDIDATE PHYS/MATH) 1972
MIRZA DMITRI GRIGOR'YEVICH (DOCTOR PSYCH/PEDAGOGY) 1969
NYUBERG N D 1969

INST OF HIGHER NERVOUS ACTIVITY AND NEUROPHYSIOLOGY
SAMSONVOA V G (CANDIDATE PHYSIOLOGY PROFESSOR) 1975

ALL-UNION TECHNICAL SOCIETY OF RADIO TECHNOLOGY AND COMMUNICATIONS
SMIRNOV MIKHAIL SERGEYEVICH (CANDIDATE PHYS/MATH) 1972

INST OF NORMAL AND PATHOLOGICAL PHYSIOLOGY
KURILOVA L M (DOCTOR MEDICINE) 1974
PARIN V V (DOCTOR MEDICINE ACADEMICIAN) 1971
SNYAKIN PETR GRIGOR'YEVICH (DOCTOR MEDICINE PROFESSOR) 1974

NVII OF RAILROAD HYGIENE
SOKOLOVA YE G (CANDIDATE MEDICINE) 1975
RABKIN YE B (CANDIDATE MEDICINE) 1975

MOSCOW MEDICAL STOMOTOLOGICAL INST
SNYAKIN PETR GRIGOR'YEVICH (DOCTOR MEDICINE PROFESSOR) 1974

MOSCOW NATURE-EXPLORERS SOCIETY
VILENSKAYA LARISSA V (ENGINEERING) 1977

SVERDLOVSK
SVERDLOVSK STATE PEDAGOGICAL INST
DUBRONRAVOV S N 1968
CHETIN F YE (CHEMISTRY) 1974
KRUPNOV A I (CANDIDATE PSYCH/PEDAGOGY) 1974
GABOV A YA 1964
FILIMONOV YU M 1966
FISHELEV YAKOV R (PSYCH/PEDAGOGY) 1965
KOLESNIKOV N I 1966
BELOUSOV VN 1966
ALEKSEYEV YU G 1964

KOZHEVNIKOV M M	1965
TIFLOTEKHNICHESKAYA LAB	
MURATOV R S	1966
TASHKENT	
TASHKENT STATE MEDICAL INST	
ROMEN ALEKSANDR SEMENOVICH (DOCTOR MEDICINE)	1977
TOMSK	
TOMSK POLITECHNICAL INST	
PLEKHANOV G F (CANDIDATE)	1968
MAGNITOGORSK	
MAGNITOGORSK MINING METALLURGY INST	
FISHELEV YAKOV R (PSYCH/PEDAGOGY)	1965
ALMA ATA	
KAZAKH STATE UNIVERSITY IMENI KIROV	
KOLAROVA Z I	1966
ROMEN ALEKSANDR SEMENOVICH (DOCTOR MEDICINE)	1977
MIRTSOYANTS N S	1966
NIZHNIY TAGIL	
NIZHNIY TAGIL PEDAGOGICAL INST	
GOL'DBERG IOSIF M (CANDIDATE MEDICINE)	1968
SVININA N G	1967
NOVOMEYSKIY A S (CANDIDATE MEDICINE PROFESSOR)	1968
ODESSA	
UKRAINIAN NII OF EYE DISEASES AND TISSUE THERAPY IMENI V.P. FILATOV	
SHEVALEV ANDREY YEVGEN'YEVICH (CANDIDATE MEDICINE)	1965
FACILITY UNKNOWN	
SHAPOSHNIKOV A	1977
KARAGANDA	
KARAGANDA MEDICAL INST	
ROMEN ALEKSANDR SEMENOVICH (DOCTOR MEDICINE)	1977
SHOLENSK	
SHOLENSK STATE PEDAGOGICAL INST IMENI KARL MARX	
SUDAKOV N I (CANDIDATE PSYCH/PEDAGOGY)	1966

UNKNOWN LOCATION, USSR
ISHIMSK PEDAGOGICAL INST

GILEV D K	1966

MOSCOW OBLAST' PEDAGOGICAL INST

GILEV D K	1966

FACILITY UNKNOWN

KOCHINA A I	1968
DEMENEVA A N	1972
KONSTANTINOV B	1964
GUVA A	1968
GRIGOR'YEVA YE S	1966
BIKARD V A	1968
KHOVRIN A I	1898
IVANOVA N	1968
YAKOVLEV V N	1968
PROKOPCHUK V	1965
POZNANSKAYA N B (PHYSIOLOGY)	1938
SYUZEV V P	1965
ZAKHAROV N	1968
TRET'YAKOV V	1968

WARSAW
POLISH CYBERNETIC ASSOCIATION

BORUN K	1975
BERNAT ANNA (CHEMISTRY)	1977
STANCZAKOWA JADWIGA (DOCTOR)	1977
STEFANSKIY LECH EMFAZY	1977
NOWICK JANUSZ	1977

BIOENERGETCS/BIOPLASMA

MOSCOW
MOSCOW STATE UNIVERSITY

PUSHKIN VEN'YANIM NOYEVICH (DOCTOR PSYCH/PEDAGOGY ACADEMICIAN)	1974
OSTROUMOV SERGEY ANDREYEVICH (ASPIRANT BIO-CHEMISTRY)	1974
YASAYTIS ANTANAS ANTANOVICH (DOCTOR BIO-CHEMISTRY)	1974

INST OF PSYCHOLOGY, ACADEMY OF SCIENCES, USSR

FETISOV V M	1973

ALL-UNION TECHNICAL SOCIETY OF RADIO TECHNOLOGY AND COMMUNICATIONS

RAYKOV VLADIMIR A (CANDIDATE PSYCH/PEDAGOGY)	1971

PEDAGOGICAL INST IMENI LENIN	
ANGUSHEV GEORGIY (DOCTOR PSYCH/PEDAGOGY)	1973
MOSCOW NATURE-EXPLORERS SOCIETY	
VILENSKAYA LARISSA V (ENGINEERING)	1977
INST OF PSYCHOLOGY, RSFSR ACADEMY OF PEDAGOGICAL SCIENCES	
PUSHKIN VEN'YAMIN NOYEVICH (DOCTOR PSYCH/PEDAGOGY ACADEMICIAN	1974
LENINGRAD	
LENINGRAD STATE UNIVERSITY	
SERGEYEV GENNADIY ALEKSANDROVICH (DOCTOR PHYS/MATH)	1977
GULYAYEV PAVEL I (DOCTOR BIOLOGY)	1973
YEVGRAFOV V G (PHYS/MATH)	1969
ZHUKOVSKAYA V V	1970
BRAIN INST IMENI BEKHTEREVA	
GULYAYEV PAVEL I (DOCTOR BIOLOGY)	1973
NII OF FIRST AID IMENI I.I. DZHANELIDZE	
GRYASNUKHIN YE G	1969
SHUSHKOV G D	1973
FACILITY UNKNOWN	
GONCHAROV PETR T (CANDIDATE MEDICINE)	1973
SARYCHEV S P (CANDIDATE)	1971
KAZAN	
KAZAN INST OF TRAUMATOLOGY AND ORTHOPEDICS	
BOGDANOVICH U YA (PROFESSOR)	1976
TAKHABIYEVA D G	1976
KHARKHOV	
FACILITY UNKNOWN	
IL'INSKIY A P	1976
KADNIKOV O G	1976
TOVSTYAK V V	1976
ALAM ATA	
KAZAKH STATE UNIVERSITY IMENI KIROV	
INYUSHIN VIKTOR MIKHAILOVICH (DOCTOR BIOLOGY)	1977
DOMBROVSKIY BORIS A (DOCTOR BIOLOBY ACADEMICIAN)	1970
OSTRYANIN V I	1969
CHEKUROV PETR ROMANOVICH	1975
KULAGIN V V (ENGINEERING)	1976
KIREYEVA L A	1976
GRYASNUKHIN YE G	1969

GRISHCHENKO V S	1968
ZORINA D M	1968
ZAVYALOVA OL'GA (BIO-PHYSICS)	1969
NOVOSIBIRSK	
INST OF CLINICAL AND EXPERIMENTAL MEDICINE	
SHCHURIN SIMON (CANDIDATE MEDICINE)	1973
KAZNACHEYEV VLAIL P (DOCTOR MEDICINE ACADEMICIAN)	1973
NOVOSIBIRSK MEDICAL INST OF AUTOMATION AND ELECTROMETRY	
SHUSHKOV G D	1973
FACILITY UNKNOWN	
MIKHAILOVA L P	1973
IGNATOVICH N V	1973
UNKNOWN LOCATION USSR	
FACILITY UNKNOWN	
NIKANDROV A V	1971
MIKULIN A A (MEDICINE)	1971
IVANENKO K K (PHYS/MATH)	1969
KUTNA HORA	
DISTRICT INST OF PUBLIC HEALTH	
BRADNA JIRI (CANDIDATE MEDICINE)	1977
PRAGUE	
FACILITY UNKNOWN	
DRBAL KAREL (ENGINEERING)	1973
ZEZULKA JOSEF	1977
WEISENBERGER IVAN (CANDIDATE)	1977
UNKNOWN LOCATION, CZECHOSLOVAKIA	
FACILITY UNKNOWN	
PAVLITA ROBERT	1977
PAVITOVA-ZAPADLOVA JANA	1977
WARSAW	
POLISH CYBERNETIC ASSOCIATION	
MANCZARSKIY STEFAN A (DOCTOR PHYS/MATH PROFESSOR)	1977
LUBLIN	
CATHOLIC UNIVERSITY	
SEDLAK WLODZIMIERZ (DOCTOR PROFESSOR)	1977

UNKNOWN LOCATION, BULGARIA
FACILITY UNKNOWN
ANGUSHEV GEORGIY (DOCTOR PSYCH/PEDAGOGY) 1973

PSYCHOKINESIS

MOSCOW

MOSCOW STATE UNIVERSITY
PUSHKIN VEN'YAMIN NOYEVICH (DOCTOR PSYCH/PEDAGOGY ACADEMICIAN) 1974

INST OF EARTH SCIENCES
DUBROV ALEKSANDR P (DOCTOR BIO-PHYSICS) 1977

ALL-UNION TECHNICAL SOCIETY OF RADIO TECHNOLOGY AND COMMUNICATIONS
VALUS N A (PHYS/MATH) 1968

NII OF INTROSCOPY
ADAMENKO VIKTOR GRIGOR'YEVICH (CANDIDATE BIO-PHYSICS) 1977

MOSCOW INST OF RADIO PHYSICS AND BIOENERGETICS
ADAMENKO VIKTOR GRIGOR'YEVICH (CANDIDATE BIO-PHYSICS) 1977

INST OF PSYCHOLOGY, RSFSR ACADEMY OF PEDAGOGICAL SCIENCES
PUSHKIN VEN'YAMIN NOYEVICH (DOCTOR PSYCH/PEDAGOGY ACADEMICIAN) 1974

FACILITY UNKNOWN
VINOGRADOVA ALLA M (CANDIDATE PSYCH/PEDAGOGY) 1975
YERMOLAYEV BORIS VLADIMIROVICH 1973

LENINGRAD
LENINGRAD STATE UNIVERSITY
SERGEYEV GENNADIY ALEKSANDROVICH (DOCTOR PHYS/MATH) 1977
VALUS N A (PHYS/MATH) 1968

PUL'KOVO OBSERVATORY
KOZYREV NIKOLAY A (DOCTOR ASTRONOMY PROFESSOR) 1972

FACILITY UNKNOWN
KULAGINA NINA SERGEYEVNA 1975

ODESSA
FACILITY UNKNOWN
SHAPOSHNIKOV A 1977

PERM
PERM'CITY PSYCHIATRIC HOSPITAL
KROKHALEV GENADIY PAVLOVICH (CANDIDATE PSYCH/PEDAGOGY) 1977

TALINN
FACILITY UNKNOWN
NEEME TONIS G (CANDIDATE BIOLOGY) 1977

UNKNOWN LOCATION USSR
FACILITY UNKNOWN
PEREGRIN J (CANDIDATE MEDICINE PORFESSOR) 1976

PRAGUE
FACILITY UNKNOWN
PATROVSKY VENCESLAV (CANDIDATE ENGINEERING) 1977

CHARLES UNIVERSITY
KAHUDA FRANTISEK (CANDIDATE SOCIOLOGY PROFESSOR) 1976

TRNAVA
PEDAGOGICAL INST
KRMESSKY JULIUS (DOCTOR PHYS/MATH) 1975

BRATISLAVA
CZECHOSLOVAK METROLOGICAL INST
SANDOR ANDREJ (ASPIRANT ENGINEERING) 1977

UNKNOWN LOCATION, CZECHOSLOVAKIA
FACILITY UNKNOWN
PAVLITA ROBERT 1977
PAVLITOVA-ZAPADLOVA JANA 1977

TIMISOARA
INST OF PUBLIC HEALTH
DRAGANESCU GH E (CANDIDATE MEDICINE) 1977

PSYCHIC HEALING

MOSCOW
MOSCOW NATURE-EXPLORERS SOCIETY
IVANOVA BARBARA (ASPIRANT) 1977

FACILITY UNKNOWN
VINOGRADOVA ALLA M (CANDIDATE PSYCH/PEDAGOGY) 1973

TBLISI
FACILITY UNKNOWN
KENCHADZE GEORGIY 1973
KRIVOROTOV VLADIMIR ALEKSEYEVICH (MEDICINE) 1974
KRIVOROTOV VIKTOR ALEKSEYEVICH (ENGINEERING) 1974
KRIVOROTOV ALEKSEY YE 1974

ODESSA
FACILITY UNKNOWN
SHAPOSHNIKOV A 1977

UNKNOWN LOCATION, USSR
FACILITY UNKNOWN
ROSINA ALOJZ (CANDIDATE MEDICINE) 1975
SUCHY JAROSLAV (CANDIDATE) 1969
STEFFEL ZOLTAN (ASPIRANT ENGINEERING) 1975

KUTNA HORA
DISTRICT INST OF PUBLIC HEALTH
BRADNA JIRI (CANDIDATE MEDICINE) 1977

PRAGUE
FACILITY UNKNOWN
ZEZULKA JOSEF 1977

WARSAW
POLISH COPERNICAL SOCIETY
KLIMUSZKO CZESLAW ANDRZEJ 1977

PRECOGNITION

MOSCOW
MOSCOW STATE UNIVERSITY
TERLETSKIY YA P (CANDIDATE PHYS/MATH PROFESSOR) 1972

ALL-UNION TECHNICAL SOCIETY OF RADIO TECHNOLOGY AND COMMUNICATIONS.
IVANOVA V 1975

VIL'YANADI
FACILITY UNKNOWN
SOOMARE I 1973

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PERSONALITIES AND FACILITIES—SECONDARY PARAPHYSICS AREAS (U)

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MAGNETIC FIELD EFFECT ON ORGANISMS

MOSCOW
MOSCOW STATE UNIVERSITY
CORNEANU G C 1972
CHERNYSHEV V B (CANDIDATE ENTOMOLOGY) 1974
SZEKELY I B 1972
VORONIN LEONID GRIGOR'YEVICH (DOCTOR PSYCH/PEDAGOGY ACADEMICIAN) 1976

INST OF CHEMICAL PHYSICS
BYKOV E G 1973
FINAKOVA G V 1973
BLYUMENFEL'D (DOCTOR CHEMISTRY) 1961
PIRUZYAN L A (ACADEMICIAN) 1971

INST OF INDUSTRIAL HYGIENE AND OCCUPATIONAL DISEASES
GORDON ZINAIDA V (DOCTOR) 1971

INST OF EARTH SCIENCES
DUBROV ALEKSANDR P (DOCTOR BIO-PHYSICS) 1977

INST OF HIGHER NERVOUS ACTIVITY AND NEUROPHYSIOLOGY
ALEKSANDROVSKAYA M M 1966
KHOLODOV YURIY ANDREYEVICH (DOCTOR PHYSIOLOGY) 1975
VEREVKINA G L 1965
MESYASTEV YE 1973

ALL-UNION TECHNICAL SOCIETY OF RADIO TECHNOLOGY AND COMMUNICATIONS
KHOLODOV YURIY ANDREYEVICH (DOCTOR PHYSIOLOGY) 1975

MOSCOW MEDICAL STOMATOLOGICAL INST
GOLYAKHOVSKIY V YU (PROFESSOR) 1971

INST OF PHYSIOLOGY OF PLANTS IMENI K. A. TIMIRYAZEV
TARAKANOVA G A (CANDIDATE BIOLOGY) 1961
KRYLOV ALEKSANDR VASIL'YEVICH (CANDIDATE BIOLOGY) 1961

TSNII OF TRAUMATOLOGY AND ORTHOPEDY IMENI N. N. PRIOROVA
DOLZHIKOV A P 1968

VNII OF MEDICAL INSTRUMENT MANUFACTURE
SOLOV'YEVOY G R 1975

MOSCOW MEDICAL INST NO. 2
ZHARKOVA M A (MEDICINE) 1973

FACILITY UNKNOWN	
GILINSKAYA N YU (CNADIDATE MEDICINE)	1974
ASABAYEV CH A (CANDIDATE)	1971
LENINGRAD	
LENINGRAD STATE UNIVERSITY	
VASIL'YEV LEONID L (DOCTOR PHYSIOLOGY ACADEMICIAN)	1966
MILITARY-MEDICAL ACADEMY IMENI KIROV	
INDEYKIN YE N	1971
ZHOKHOV V P	1971
INST OF MEDICAL-BIOLOGICAL PROBLEMS	
KLIMOVSKAYA L D	1975
SMIRNOVA N P	1975
BRAIN INST IMENI BEKHTEREVA	
GAL'VAS YE T	1946
TERENT'YEVYY	1946
VASIL'YEV LEONID L (DOCTOR PHYSIOLOGY ACADEMICIAN)	1966
PERIKHAN'YANTS	1946
PUL'KOVO OBSERVATORY	
MUZALEVSKAYA N I	1975
LENINGRAD OKB OF BIOLOGICAL AND MEDICAL CYBERNETICS	
UNKNOWN RESEARCHERS	1968
KEIV	
INST OF CYBERNETICS	
IVANOV-MUROMSKIY K A	1972
LIKHACHEV A I (CANDIDATE)	1975
KIEV INST OF GENERAL AND COMMUNAL HYGIENE	
SIDORENKO G I	
FACILITY UNKNOWN	
DEGEN I L (DOCTOR)	1973
KAZAN	
KAZAN MEDICAL INST IMENI KURASHOVA	
SITKIN M I	1973
KAZAN STATE UNIVERSITY IMENI ULYANOVA LENINA	
BUTORINA N	1966
AMINEVA R I	1967
AMINEV GESIOD ABDULOVICH (CANDIDATE)	1976

UFA
UFA AVIATION INST
AMINEV GESIOD ABDULOVICH (CANDIDATE) 1976

TOMSK
FACILITY UNKNOWN
GORSHENINA T I (CANDIDATE) 1965

ASHKHABAD
TURKMEN REPUBLIC NI STATION FOR PLANT PROTECTION
CHERNYSHEV V B (CANDIDATE ENTOMOLOGY) 1974

KHARKHOV
FACILITY UNKNOWN
DRUZ'V A (CANDIDATE) 1967

ALMA ATA
KAZAKH STATE UNIVERSITY IMENI KIROV
AMONIV G M
MUZALEVSKAYA N I 1975

FACILITY UNKNOWN
ZELENOVA N I 1966

ROSTOV NA DONU
ROSTOV STATE UNIVERISTY
KOGAN ALEKSANDR B (CANDIDATE) 1972

NEUROCYBERNETICS INST
KOGAN ALEKSANDR B (CANDIDATE) 1972

INST OF ROENTGENOLOGY, RADIOLOGY AND ONCOLOGY
UKOLOVA M A 1961

NOVOSIBIRSK
INST OF CLINICAL AND EXPERIMENTAL MEDICINE
KAZNACHEYEV VLAIL P (DOCTOR MEDICINE ACADEMICIAN) 1973

NOVOSIBIRSK STATE MEDICAL INST
YAVORSKAYA V YE 1971
PROSKURYAKOV S A (DOCTOR MEDICINE PROFESSOR) 1971

SIBERIAN ENERGETICS INST
YAGODINSKIY VIKTOR N 1969

PUSHCHINO
INST OF BIOLOGICAL PHYSICS
ERDMAN G M (CANDIDATE BIOLOGY) 1961

VORONIN LEONID GRIGOR'YEVICH (DOCTOR PSYCH/PEDAGOGY ACADEMICIAN)	1976
VORONEZH	
FACILITY UNKNOWN	
GOLOVAISKIY A S (CANDIDATE)	1973
RIGA	
LATVIAN STATE UNIVERSITY	
UNKNOWN RESEARCHERS	1974
RIGA NII OF TRAUMATOLOGY AND ORTHOPEDY	
KIKUT R P	1975
PERM'	
PERM'MEDICAL INST	
KARMILOV V I (MEDICINE)	1938
SELEZNEV A V	1938
SKACHEDUB R G (CANDIDATE MEDICINE)	1961
MORENDOVICH M R (PROFESSOR)	1961
FACILITY UNKNOWN	
IR'YANOV YU M (CANDIDATE)	1971
TYURYAYEVA A A (MEDICINE)	1964
IZHEVSK	
IZHEVSK MEDICAL INST	
KHIMICH G G	1961
MURAV'YEV M F	
VIL'YANDI	
TSNII OF TRAUMATOLOGY AND ORTHOPEDY IMENI N. N. PRIOROVA	
KRUTKO N F	1968
KALININGRAD	
FACILITY UNKNOWN	
KHODORKOVSKIY V A	1971
GLEYZER S I (CANDIDATE)	1972
VOLGOGRAD	
VOLGOGRAD MEDICAL INST	
GONCHAROV N I	1969
MERKULOV N G	1969
KALININ	
KALININ MEDICAL INST	
DESNITSKOY M M (PROFESSOR)	
UNKNOWN LOCATION, USSR	
FACILITY UNKNOWN	
KHOMASURIDZE K N	1969

DORFAMN YA G	1971
DOROZHKIN L I	1971
KHASANOVA R I	1966
KLIMENT'YEVA N A	1972
CHUVAYEV P P	1969
CHEPALENKO	1972
KIRYUSHKIN S S	1966
BROUN G I	1974
GALAKTIONOVA G V	1974
GAGOSHIDZE N SH	1969
GOL'TSEVA N N	1971
GOLEV V P	1972
GUGUSHVILI D F	1969
IL'INSKIY O B	1974
ANAN'YEV L M	1972
ANDRIANOV YU N	1974
ANUFRIYEVA T V	1970
ANISIMOVA V M	1972
KHAYRETDINOV M S	1969
BOYKO V I	1973
KORDYUKOV YE V (CANDIDATE MEDICINE)	
ATAYEV M M	1972
SIKORA S I	1973
VYALOV A M	1973
LISICHKINA Z S	1973
VYSOTSKIY M V	1969
ROMANOV V D	1969
OSENNIY A S	1969
TRUSH V D	1966
TSAGREYAN S N	1969
SACHAVA T S	1971
ZAGREBIN A M	1972
STRZHIZHOVSKIY A D	1974
PAVELKO V M	1971
ZHGENTI T G	1969
NEYMAN B A	1969
VILENCHIK M M	1967
SHIPL'BERG P I	1969
SHCHERBAKOVA G V	1966
MADIYEVSKIY YA M	1966
ZHADIN M N	1966
PARKULAB L V (CANDIDATE MEDICINE)	1970
RYABCHUK YU A	1971

PRAGUE

FACILITY UNKNOWN

VALASEK E (ENGINEERING)	1977
REJDAK ZDENEK (CANDIDATE SOCIOLOGY)	1975

MASOPUST VLADIMIR (ASPIRANT) 1971
PATROVSKY VENCESLAV (CANDIDATE ENGINEERING) 1977
TICHA A (CANDIDATE MEDICINE) 1977
CHARLES UNIVERSITY
NOVAK JOSEF (DOCTOR MEDICINE) 1971

OLOMOUC
CENTER FOR CLINICAL ONCOLOGY
JURYSEK OLDRICH (CANDIDATE MEDICINE) 1977
ZERT VLASTOMIL 1977

UNKNOWN LOCATION, CZECHOSLOVAKIA
FACILITY UNKNOWN
PAVLITOVA-ZAPADLOVA JANA 1977
PAVLITA ROBERT 1977

POLAND
NATIONAL RESEARCH INST OF MOTHER AND CHILD
CZERSKI PREMISLAV

ELECTRO-MAGNETIC FIELD/WAVE EFFECT ON ORGANISMS

MOSCOW
MOSCOW STATE UNVIERSITY
SMIRNOV V S (BIOLOGY) 1975
INST OF INDUSTRIAL HYGIENE AND OCCUPATIONAL DISEASES
GORDON ZINAIDA V (DOCTOR) 1971
BYCHKOV M S 1973
DRONOV I S 1973
TOLGSKAYA M S (MEDICINE) 1971
INST OF HIGHER NERVOUS ACTIVITY AND NEUROPHYSIOLOGY
GVOZDIKOVA Z M (CANDIDATE) 1973
ANAN'YEVA V M 1964
LIVANOV MIKHAIL NIKOLAYEVICH (DOCTOR PHYSIOLOGY ACADEMICIAN) 1975
KHOLODOV YURIY ANDREYEVICH (DOCTOR PHYSIOLOGY) 1975
ZENINA I I 1964
ZAK V I 1964
ALL-UNION TECHNICAL SOCIETY OF RADIO TECHNOLOGY AND COMMUNICATIONS
KHOLODOV YURIY ANDREYEVICH (DOCTOR PHYSIOLOGY) 1975
KAMENSKIY YURIY I (CANDIDATE BIO-PHYSICS) 1975
PRESMAN ALEKSANDR SAMUILOVICH (CANDIDATE BIOLOGY) 1972
PODSHIBYAKIN A K (DOCTOR PHYSIOLOGY) 1965
RAPPEPORT S M 1964
INST OF EVOLUTIONARY MORPHOLOGY AND ANIMAL ECOLOGY IMENI SKVORTSOV
PROTASOV VLADIMIR RUSTAMOVICH (DOCTOR BIOLOGY) 1975

FIRST MOSCOW MEDICAL INST IMENI SECHENOV	
ANOKHIN PETR KUZMICH (DOCTOR PHYSIOLOGY ACADEMICIAN)	1974
INST OF OCEANOLOGY	
MIKAHL'TSEV IGOR	
TSNII OF HEALTH RESORT SCIENCE AND PHYSIOTHERAPY	
DOLINA L A	1969
FACILITY UNKNOWN	
KITSOVSKAYA I A (CANDIDATE)	1968
ASABAYEV CH A (CANDIDATE)	1971
LENINGRAD	
LENINGRAD STATE UNIVERSITY	
GULYAYEV PAVEL I (DOCTOR BIOLOGY)	1973
GRANOVSKAYA R M	1975
GORODETSKAYA S F	1971
PAVLENKO V K	1970
OSTROUMOV G A	1968
SHLIPPENBAKH I YA	1973
INST OF PHYSIOLOGY IMENI I. P. PAVLOVA	
GRANOVSKAYA R M	1975
PETROV F P	1952
LENINGRAD INST OF AVIATION INSTRUMENT PRODUCTION (LIAP)	
MANOYLOV V YE	1974
BRAIN INST IMENI BEKHTEREVA	
GULYAYEV PAVEL I (DOCTOR BIOLOGY)	1973
BARANOVSKAYA O P	1961
SVYADOSHCH A M (DOCTOR MEDICINE PROFESSOR)	1974
LENINGRAD SANITARY-HYGIENE MEDICAL INST	
PLOTNIKOV V G	1976
TARASOVA G H	1976
SOLOV'YEV A V	1976
PLOTNIKOVA L B	1976
YAKOVLEVA M I	1976
SKOROBOGATOVA A M	1976
KIEV	
INST OF CYBERNETICS	
LIKACHEV A I (CANDIDATE)	1975
IVANOV-MUROMSKIY K A	1972
INST OF PSYCHOLOGY	
LEONTOVICH ALEKSANDR VASIL'YEVICH (DOCTOR ACADEMICIAN)	1948
INST OF CLINICAL PHYSIOLOGY	
PODSHIBYAKIN A K (DOCTOR PHYSIOLOGY)	1965
KIEV INST OF GENERAL AND COMMUNAL HYGIENE	
YERSHOVA L K (CANDIDATE MEDICINE)	1972
SERDYUK A M	1975

FACILITY UNKNOWN	
GRISHKO F I (CANDIDATE)	1959
DUMANSKIY YU D (DOCTOR)	1970
TASHKENT	
TASHKENT STATE MEDICAL INST	
ROMEN ALEKSANDR SEMENOVICH (DOCTOR MEDICINE)	1977
KRASNOYARSK	
FACILITY UNKNOWN	
BAN'KOV V I (CANDIDATE)	1974
TOMSK	
TOMSK POLITECHNICAL INST	
DENISOV V N (CANDIDATE)	1970
PLEKHANOV G F (CANDIDATE)	1968
KHARKHOV	
FACILITY UNKNOWN	
DANILEVSKIY V YA	1924
KISHINEV	
INST OF ZOOLOGY	
FEDORENKO N YE	1966
MARITS A M	1966
ALMA ATA	
KAZAKH STATE UNIVERSITY IMENI KIROV	
INYUSHIN VIKTOR MIKHAILOVICH (DOCTOR BIOLOGY)	1977
KIREYEVA L A	1976
CHEKUROV PETR ROMANOVICH	1975
OSTRYANIN V I	1969
ROMEN ALEKSANDR SEMENOVICH (DOCTOR MEDICINE)	1977
VOROBYEV N A	1969
TBLISI	
INST OF CYBERNETICS	
KHVEDELIDZE MORIS ARSENT'YEVICH (DOCTOR PHSY/MATH)	1967
APRIDONIDZE V	1967
SOKOLOVA M	1967

NOVOSIBIRSK
INST OF CLINICAL AND EXPERIMENTAL MEDICINE
SHAKIROVA T M 1973
NOVOSIBIRSK STATE MEDICAL INST
PROSKURYAKOV S A (DOCTOR MEDICINE PROFESSOR) 1971

PUSHCHINO

INST OF BIOLOGICAL PHYSICS
KAYUSHIN L P (DOCTOR BIO-PHYSICS)
LIVANOV MIKHAIL NIKOLAYEVICH (DOCTOR PHYSIOLOGY ACADEMICIAN) 1975

GOR'KIY

GOR'KIY STATE UNIVERSITY IMENI LOBACHEVSKIY
PODLIPALIN YU D 1971
NII OF APPLIED MATHEMATICS AND CYBERNETICS
PODLIPALIN YU D 1971

KARAGANDA

KARAGANDA MEDICAL INST
ROMEN ALEKSANDR SEMENOVICH (DOCTOR MEDICINE) 1977
KARAGANDA STATE UNIVERSITY
SVYADOSHCH A M (DOCTOR MEDICINE PROFESSOR) 1974

MINSK

INST OF GENETICS AND CYTOLOGY
KULIN YE T 1973

UNKNOWN LOCATION, USSR

INST OF THE BIOLOGY OF RESERVOIRS
KRAYUKHIN B V (DOCTOR BIOLOGY) 1975
VNII OF GEOPHYSICS
KAMENSKIY YURIY I (CANDIDATE BIO-PHYSICS) 1975
CRIMEAN MEDICAL INST
CHELKOVA Z 1971
BRODOVSKAYA 1971
ACHKASOVA YU N 1971
VINOGRADOV S A 1971
TEMUR'YANTS N A 1971
VOLYNSKIY A M 1973
ROZENBERG V D 1971
FACILITY UNKNOWN
GURSHTEYN T V 1958
MOTOV A I 1964
KOSTYUK A YU 1964

ARKAD'YEV V K	1924
ANTIMONIY G D (CANDIDATE)	1974
MIRUTENKO V I	1972
MIKHAILOVA-LURASHEVA V D	1974
BOYTKO V I	1964
BOGACH P G	1972
KHRUSHCHEV V A	1973
MISHIN V V	1964
BELOKRINITSKIY	1971
NEFEDOV YU YA	
BUDKO L N	1964
KORYTNYY D L	1967
BUT V I	1967
LEVITINA N A	1964
CHIRKOV M M	1964
LERMANTOV V V	1926
DOLGIY N L	1972
KAZHINSKIY BERNARD BERNARDOVICH (CANDIDATE PHYS/MATH)	1963
MIGACHEVA A F	1969
SHUYSKAYA B Z	1970
ZHUKOV YU A	1964
SYNGAYEVSKAYA V A	1969
SEMENOV A N	1969
ZHORZHOLIANI B	1967
TURLYGIN S YA (CANDIDATE PROFESSOR)	1943
VENGER T F	1968
SMIRNOVA YE P	1967
POPOV F G	1964
SALEY A P	1964
SKRITSKIY N A	1926
SKRIPAL'A V	1974
SHMELEV V P	1964

OLOMOUC

CENTER FOR CLINICAL ONCOLOGY

JURYSEK OLDRICH (CANDIDATE MEDICINE)	1977
ZERT VLASTOMIL	1977

POLAND

NATIONAL RESEARCH INST OF MOTHER AND CHILD

CZERSKI PREMISLAV	

WARSAW

POLISH CYBERNETIC ASSOCIATION

MANCZARSKIY STEFAN A (DOCTOR PHYS/MATH PROFESSOR)	1977

TIMISOARA
CENTER OF HYGIENE AND PUBLIC HEALTH
MAZO L YA 1976

HELIOBIOLOGY

MOSCOW

MOSCOW STATE UNIVERSITY
CHERNYSHEV V B (CANDIDATE ENTOMOLOGY) 1974
INST OF MEDICAL-BIOLOGICAL PROBLEMS
AGADZHANYAN NIKOLAY ALEKSANDROVICH (DOCTOR MEDICINE PROFESSOR) 1975
INST OF EARTH SCIENCES
DOBROV ALEKSANDR P (DOCTOR BIO-PHYSICS) 1977
ALL-UNION TECHNICAL SOCIETY OF RADIO TECHNOLOGY AND COMMUNICATIONS
PRESMAN ALEKSANDR SAMUILOVICH (CANDIDATE BIOLOGY) 1972
SAL'NIKOV S N (CANDIDATE MEDICINE) 1965
PODSHIBYAKIN A K (DOCTOR PHYSIOLOGY) 1965
INST OF PHYSICS OF THE EARTH
TROITSKAYA VALERIYA ALEKSEYEVNA 1974
MOSCOW AVIATION INST
ZIGEL' FELIKS U (DOCTOR ASTRONOMY) 1967
INST OF CRYSTALLOGRAPHY
KISLOVODSKIY L D 1971
FACILITY UNKNOWN
CHIZHEVSKIY ALEKSANDR LEONIDOVICH (DOCTOR PROFESSOR) 1964
KORZHUYEV P A (DOCTOR ACADEMICIAN) 1969
SHISHINA YULIYA GRIGOR'YEVNA (PSYCH/PEDAGOGY) 1973

LENINGRAD

LENINGRAD STATE UNIVERSITY
SERGEYEV GENNADIY ALEKSANDROVICH (DOCTOR PHYS/MATH) 1977
MILITARY-MEDICAL ACADEMY IMENI KIROV
INDEYKIN YE N 1971
ZHOKHOV V P 1971
INST OF MEDICAL-BIOLOGICAL PROBLEMS
KARAZHAYEVA S A (ASTRONOMY) 1975
RASHKOVICH L L 1964
RYVKINA F Z 1965
RYVKIN B Z 1975
VITELS L A (ASTRONOMY) 1975
ARCTIC AND ACTARCTIC NII
OL' A I 1971

KIEV

INST OF CLINICAL PHYSIOLOGY
PODSHIBYAKIN A K (DOCTOR PHYSIOLOGY) 1975
PODSHIPYAKINA L I 1965

SVERDLOVSK

SVERDLOVSK MEDICAL INST
NOVIKOVA K F (ASTRONOMY) 1971
RYVKIN B A 1975
RYVKINA F Z 1965
TOKAREVA N V 1971
NII OF EXPERIMENTAL AND CLINICAL MEDICINE
LAUTSEVICHUS L Z 1971
YUSHENAYTYE YA P 1971
INST OF PHYSICS AND MATHEMATICS
BLINSTRUBAS S I 1971

CHITA

CHITA MEDICAL INST
BORISOV V K 1963
KOZLOV V A 1963
KOKHANSKIY V V 1963
PRISTAY YA P 1963

TOMSK

TOMSK POLITECHNICAL INST
OPALINSKAYA A N 1969
TOMSK STATE UNIVERSITY
MAKSIMOV A A (DOCTOR ZOOLOGY) 1971
LAVROVSKIY A A (DOCTOR) 1971
TOMSK MEDICAL INST
DESYATOV V P (ASTRONOMY) 1971
NAGORSKIY P M 1935

ASHKHABAD

TURKMEN REPUBLIC NI STATION FOR PLANT PROTECTION
CHERNYSHEV V B (CANDIDATE ENTOMOLOGY) 1974
ASHKHABAD NII EPIDEMIOLOGY AND HYGIENE
GERING-GALAKTIONOVA I V (CANDIDATE MEDICINE) 1975
KUPRIYANOV S N (CANDIDATE MEDICINE) 1975
TURKMEN MEDICAL INST
GERING-GALAKTIONOVA I V (CANDIDATE MEDICINE) 1975
KUPRIYANOV S N (CANDIDATE MEDICINE) 1975

TURKMEN NII OF ROENTGENOLOGY, RADIOLOGY AND ONCOLOGY

GERING-GALAKTIONOVA I V (CANDIDATE MEDICINE)	1975
KUPRIYANOV S N (CANDIDATE MEDICINE)	1975

ALMA ATA

FACILITY UNKNOWN

DUBYANSKIY M A	1976
DUBYANSKAYA L D	1976
BOGATYREV S K	1976
TITOV L V	1976

KISLOVODSK

PUL'KOVO OBSERVATORY

GNEVYSHEV M N (CANDIDATE ASTRONOMY)	1971

NOVOSIBIRSK

BIOLOGICAL INST

MAKSIMOV A A (DOCTOR ZOOLOGY)	1971

SIBERIAN ENERGETICS INST

ALEKSANDROV YU V	1967
DRUZHININ I P	1966
KONOVALENKO Z P	1966
YAGODINSKIY VIKTOR N	1969

MINSK

INST OF BIOPHYSICS

OSIPOV A I	1971

STAVROPOL'

STAVROPOL'STATE MEDICAL INST

ALABOVSKIY YU I	1971
BABENKO A N	1971

FACILITY UNKNOWN

MALIKOV B ZH	1968

KALININGRAD

FACILITY UNKNOWN

KHODORKOVSKIY V A	1971
GLEYZER S I (CANDIDATE)	1972

IRKUTSK

INST OF TERRESTRIAL MAGNETISM, IONOSPHERE, AND RADIO WAVE PROPAGATION

BEN'KOVA N P (CANDIDATE PROFESSOR)	1973

FACILITY UNKNOWN

PLATONOVA A I (CANDIDATE MEDICINE)	1971

KALININ

KALININ MEDICAL INST

PAZYUK V A	1971

UNKNOWN LOCATION, USSR

INST FOR PROGRESS OF MEDICAL SCIENCE

SAL'NIKOV S N (CANDIDATE MEDICINE)	1965

CRIMEAN ASTROPHYSICAL OBSERVATORY

VLADIMIRSKIY B M	1971

CRIMEAN MEDICAL INST

ACHKASOVA YU N	1971
CHELKOVA Z	1971
BRODOVSKAYA	1971
VOLYNSKIY A M	1973
TEMUR'YANTS N A	1971
VINOGRADOV S A	1971
ROZENBERG V D	1971

FACILITY UNKNOWN

ISHAKOV V P	1972
DRAGAN YA P	1974
GOLOVANOV L V	1976
SOSUNOV A V	1966
SHCHERBINOVSKIY N S	1964
KUKSENKO V I	1974
TSIMAKHOVICH N P	1967
SHUSHAKOV A P	1966
PANOV T I	1966
SHUL'TS N A (CANDIDATE)	1964
PARKULAB L V (CANDIDATE MEDICINE)	1970
VOYCHISHIN K S	1974
ROZHDESTVENSKAYA YE B (CANDIDATE MEDICINE)	1971
NEYMAN B A	1969

PRAGUE

FACILITY UNKNOWN

PATROVSKY VENCESLAV (CANDIDATE ENGINEERING)	1977

BUDAPEST

FACILITY UNKNOWN
BALOUGH BARNA (CANDIDATE) 1976

AUTOGENIC TRAINING/BIOFEEDBACK

MOSCOW

INST OF PROBLEMS OF INFORMATION TRANSMISSION
BONGARD M M (CANDIDATE PHYS/MATH) 1971
INST OF NEUROLOGY
ROZHNOV VLADIMIR YEVGEN'YEVICH (PSYCH/PEDAGOGY) 1974
SLUTSKIY A S 1974
INST OF THE RUSSIAN LANGUAGE
DOBROVICH A B (CANDIDATE MEDICINE) 1970
INST OF PHYSICAL CULTURE
DASHKEVICH O V 1968
CHERNIKOVA O A 1971
INST OF HIGHER NERVOUS ACTIVITY AND NEUROPHYSIOLOGY
SIMONOV PAVEL VASIL'YEVISH (DOCTOR MEDICINE) 1973
YERSHOV P M 1964
VALUYEVA M N 1968
ALL-UNION TECHNICAL SOCIETY OF RADIO TECHNOLOGY AND COMMUNICATIONS
RAYKOV VLADIMIR A (CANDIDATE PSYCH/PEDAGOGY) 1971
INST OF NORMAL AND PATHOLOGICAL PHYSIOLOGY
KOSMOLINSKIY F P 1972
TISHCHENKO M I (DOCTOR MEDICINE) 1967
MOSCOW NII OF PSYCHIATRY
LEVI V L(PSYCH/PEDAGOGY) 1970
FIRST MOSCOW MEDICAL INST IMENI SECHENOV
LEVI V L (PSYCH/PEDAGOGY) 1970
NVII HYDROLOGY AND ENGINEERING GEOLOGY
MATVEYEV VALERIY SERGEYEVICH (CANDIDATE GEO SCIENCES) 1976
SOCHEVANOV NIKOLAY NIKOLAYEVICH (CANDIDATE GEO SCIENCES) 1976
VNII OF MINERAL RAW MATERIALS
SOCHEVANOV NIKOLAY NIKOLAYEVICH (CANDIDATE GEO SCIENCES) 1976
INTERDEPARTMENTAL COMMISION FOR THE BIOPHYSICAL EFFECT
SOCHEVANOV NIKOLAY NIKOLAYEVICH (CANDIDATE GEO SCIENCES) 1976
FACILITY UNKNOWN
BORTNIK T L (PSYCH/PEDAGOGY) 1972

LENINGRAD

LENINGRAD STATE UNIVERSITY
MARISHCHUK V L (CANDIDATE PSYCH/PEDAGOGY) 1974
MILITARY-MEDICAL ACADEMY IMENI KIROV
LOBZIN V S (DOCTOR MEDICINE) 1974
ALEKSEYEV A V (PSYCH/PEDAGOGY) 1974
KULAGIN YU M (MEDICINE) 1969
INST OF EXPERIMENTAL MEDICINE
BEKHTEREVA N P (DOCTOR PHYSIOLOGY ACADEMICIAN) 1975
LENINGRAD NI PSYCHONEUROLOGICAL INST IMENT BEKHTEREV
BEL'YAYEV G S (CANDIDATE MEDICINE) 1974
KOPYLOVA I K 1974
MAZHBITZ A A 1968
LENINGRAD INST OF AVIATION INSTRUMENT PRODUCTION (LIAP)
GUREVICH G I (DOCTOR PROFESSOR) 1972
BRAIN INST IMENI BEKHTEREVA
BARANOVSKAYA O P 1961
SVYADOSHCH A M (DOCTOR MEDICINE PROFESSOR) 1974
VNII OF PULMONOLOGY
TISHCHENKO M I (DOCTOR MEDICINE) 1967
FACILITY UNKNOWN
BUL'PAVEL I (PSYCH/PEDAGOGY PROFESSOR) 1974

KIEV

FACILITY UNKNOWN
BOYIKO V I 1976
PTITSA A G 1976

TASHKENT

TASHKENT STATE MEDICAL INST
ROMEN ALEKSANDR SEMENOVICH (DOCTOR MEDICINE) 1977

KHARKHOV

KHARKHOV NII OF NEUROLOGY AND PSYCHATRY
KATALEVSKAYA L G 1974
KOBZAR A D 1974
MIROVSKIY K I (CANDIDATE PSYCH/PEDAGOGY) 1974
SOLYANIK V L 1974
SHOGAN A N (PSYCH/PEDAGOGY) 1968
SUKHORUKOV B I 1974
FACILITY UNKNOWN
IL'INSKIY A P 1976
IL'INSKAYA L S 1970

ALMA ATA

KAZAKH STATE UNIVERSITY IMENI KIROV

INYUSHIN VIKTOR MIKHAILOVICH (DOCTOR BIOLOGY)	1977
ROMEN ALEKSANDR SEMENOVICH (DOCTOR MEDICINE)	1977

NOVOSIBIRSK

NOVOSIBIRSK MEDICAL INST OF AUTOMATION AND ELECTROMETRY

BUTEYKO (CANDIDATE)	1969

VORONEZH

VORONEZH STATE UNIVERSITY

LAKOMKIN A I (DOCTOR MEDICINE)	1974
MYAGKOV I F (CANDIDATE PSYCH/PEDAGOGY PROFESSOR)	1974

VORONEZH MEDICAL INST

SKRIPACHENKO T A	1968
SHESTAKOV B I	1968

KARAGANDA

KARAGANDA MEDICAL INST

ROMEN ALEKSANDR SEMENOVICH (DOCTOR MEDICINE)	1977

KARAGANDA STATE UNIVERSITY

SVYADOSHCH A M (DOCTOR MEDICINE PROFESSOR)	1974

TALINN

FACILITY UNKNOWN

OKK A A	1975

UNKNOWN LOCATION, USSR

FACILITY UNKNOWN

GLISSEN L D	1969
ILYUTKIN G N	1970
KAREV A V	1970
KHRUSHCHEV V A	1973
ALLIK T A	1969
LEBEDEV V	1969
BIRGIN S K	1967
SLOBODYANIK A P	1966
VISH I M (PSYCH/PEDAGOGY)	1974
MOKIYEVSKIY A D	1968
SOLOV'YEV N A	

TARTU

FACILITY UNKNOWN

VIRU A A (PHYSIOLOGY PROFESSOR)	1975

POLAND

FACILITY UNKNOWN
DASHKEVICH O V 1968

SOFIA

INST OF SUGGESTOLOGY

LOZANOV GEORGIY K (DOCTOR MEDICINE PROFESSOR) 1976

UNKNOWN LOCATION, HUNGARY

COLLEGE FOR THERAPEUTIC PEDAGOGY
ILLYES SANDOR 1974

KIRLIAN PHOTOGRAPHY

MOSCOW

MOSCOW STATE UNIVERSITY
SHESTERIN F S 1969
TAMBIEV A KH 1969
TELITCHENKO M M 1969
ALL-UNION TECHNICAL SOCIETY OF RADIO TECHNOLOGY AND COMMUNICATIONS
NAUMOV EDUARD K 1977
NII OF INTROSCOPY
ADAMENKO VIKTOR GRIGOR'YEVICH (CANDIDATE BIO-PHYSICS) 1977
ZHARYY YE V 1973
ALL-UNION EVENING INST OF MACHINE BUILDING
NAUMOV EDUARD K 1977
MOSCOW INST OF RADIO PHYSICS AND BIOENERGETICS
ADAMENKO VIKTOR GRIGOR'YEVICH (CANDIDATE BIO-PHYSICS) 1977
CENTRAL CONTROL INST FOR MEDICAL-BIOLOGICAL PREPARATIONS
IMENI TARASEVI
NAUMOV EDUARD K 1977
FACILITY UNKNOWN
VINOGRADOVA ALLA M (CANDIDATE PSYCH/PEDAGOGY) 1973

LENINGRAD

LENINGRAD STATE UNIVERSITY
GEYKIN MIKHAIL K (CANDIDATE MEDICINE PROFESSOR) 1968
FRANTOV G S 1974
MIKHALEVSKIY V I (ENGINEERING) 1969

TASHKENT

TASHKENT STATE MEDICAL INST	
ROMEN ALEKSANDR SEMENOVICH (DOCTOR MEDICINE)	1977

ASTRAKHAN

ASTRAKHAN MEDICAL INST	
FEDOROVA N N (CANDIDATE BIOLOGY)	1969

KISHINEV

KISHINEV INST IMENI M. F. FRUNZE	
CHACHULAN V I	1964
BRIK P L	1964
LYSIKOV V KH	1964
KRUPENIN K I	1964

ALMA ATA

KAZAKH STATE UNIVERSITY IMENI KIROV	
CHEKUROV PETR ROMANOVICH	1975
DOKTOROVICH VALERIY A	1973
GIBADULLIN F F	1969
INYUSHIN VIKTOR MIKHAILOVICH (DOCTOR BIOLOGY)	1977
GRISHCHENKO V S	1968
BORKHSENIUS V S	1974
STEPANOV R S (DOCTOR MEDICINE PROFESSOR)	1969
MULATOV A K	1969
KIREYEVA L A	1976
SHUYSKIY N YA	1968
KIRLIAN VALENTINA KHRISANFOVNA	1973
KIRLIAN SEMEN DAVIDOVICH	1977
ROMEN ALEKSANDR SEMENOVICH (DOCTOR MEDICINE)	1977
VOROBYEV N A	1969

KRASNODAR

FACILITY UNKNOWN	
KIRLIAN SEMEN DAVIDOVICH	1977
KIRLIAN VALENTINA KHRISANFOVNA	1973

KARAGANDA

KARAGANDA MEDICAL INST	
ROMEN ALEKSANDR SEMENOVICY (DOCTOR MEDICINE)	1977

TALINN

TALLIN POLITECHNICAL INST

HALDRE HELDUR HANS (BIO-PHYSICS)	1977
AMOS ANDRES	1977
NIGESON KERSTI (ART)	1977

FACILITY UNKNOWN

TIIK HEINO (CANDIDATE MEDICINE)	1975

UNKNOWN LOCATION USSR

FACILITY UNKNOWN

AUBAKOV A F (CANDIDATE CRIMINOLOGY)	
LOZNOVSKIY YU YA	1971
MIKHALEVSKAYA K N (CANDIDATE MEDICINE)	

PRAGUE

FACILITY UNKNOWN

MALINSKIY KAREL (CANDIDATE ENGINEERING)	1977
REJDAK ZDENEK(CANDIDATE SOCIOLOGY)	1975

WARSAW

POLISH CYBERNETIC ASSOCIATION

STEFANSKIY LECH EMFAZY	1977

SOFIA

FACILITY UNKNOWN

SMILOV ATHANAS	1977

BUCHAREST

LABOR PROTECTION AND HYGIENE CENTER

BOLINTINEANN C	1977
BIBIS M (CHEMISTRY)	1977
DUMITRESCU IOAN FLORIN (CANDIDATE MEDICINE)	1977
CONSTANTINESCU G (ENGINEERING)	1977
MANULAS I(PHYS/MATH)	1977
MODREANU M (PHYS/MATH)	1977
VASILESCU ILIE-PUIU (PSYCH/PEDAGOGY)	1977
VASILESCU MARIUS SORIN	1977

I.P. I.U.

NICULESCU V (ENGINEERING)	1977

VICTOR BABES INSTITUTE

GUJA CORNELIA (BIO-PHYSICS)	1977
SAHLEANU V (DOCTOR MEDICINE)	1977

UNKNOWN LOCATION, ROMANIA

FACILITY UNKNOWN

HERIVAN RELA	1975
PORTOCALA RADU	1975

(ELECTRO) BIOLUMINESCENCE

MOSCOW

MOSCOW STATE UNIVERSITY

IVANOV I N	1967
PETRUSEVICH YU M	1975
TARUSOV BORIS NIKOLAYEVICH (DOCTOR BIO-PHYSICS PROFESSOR)	1975
TAMBIEV A KH	1969

INST OF CHEMICAL PHYSICS

ROZINSKAYA VALERIYA (ASPIRANT MEDICINE)	1976
VASIL'YEV ROSTISLAV (DOCTOR PHYS/MATH)	1976

VNII FOR SANITARIUM TREATMENT AND PHYSIOTHERAPY (VNIISTP)

BONDAREV I M	1973
PERELMAN M I	1973
MITROFANOV A I	1973
SHPOLYANSKAYA A M	1973
ZHURAVLEV A I	1973

TUBERCULOSIS NII

BONDAREV I M	1973
PERELMAN M I	1973
SHPOLYANSKAYA A M	1973
MITROFANOV A I	1973
ZHURAVLEV A I	1973

VNII OF THE CANNING AND VEGETABLE-DRYING INDUSTRY

TARUSOV BORIS NIKOLAYEVICH (DOCTOR BIO-PHYSICS PROFESSOR)	1973

VNII OF THE CHEMISTRY OF MATERIALS FOR PLANT PROTECTION

SHCHEGLOV YU V	1974

CENTRAL CONTROL INST FOR MEDICAL-BIOLOGICAL PREPARATION IMENI TARASEVICH

PETUKHOV VALERIY GEORGIYEVICH (DOCTOR BIOLOGY)	1977

ECHNIADZIN

NII OF AGRICULTURE

AVAKYAN TS M	1966
ADZHYAN N S	1966

ASTRAKHAN

ASTRAKHAN MEDICAL INST
FEDOROVA N N (CANDIDATE BIOLOGY) 1969

ALMA ATA

KAZAKH STATE UNIVERSITY IMENI KIROV
KIREYEVA L A 1976

KRASNODAR
VNII OF RICE
SHCHEGLOV YU V 1974

NOVOSIBIRSK
INST OF CLINICAL AND EXPERIMENTAL MEDICINE
SHCHURIN SIMON (CANDIDATE MEDICINE) 1973
SUBBOTIN M YA 1971
SHUYSKAYA B Z 1971
KAZNACHEYEV VLAIL P (DOCTOR MEDICINE ACADEMICIAN) 1973
FACILITY UNKNOWN
IGNATOVICH N V 1973
MIKHAILOVA L P 1973

ZHODINE
BYELORUSSIAN AGRICULTURAL ACADEMY
BUTOV G P 1973

MINSK

INST OF BIOPHYSICS
UNKNOWN RESEARCHERS

GOLITSHINO

VNII OF FITOPATHOLOGY
SHCHEGLOV YU V 1974

UNKNOWN LOCATION, USSR

MAIN BOTANICAL GARDEN
BAYTULIN I O (CANDIDATE BIOLOGY) 1969
INST OF THE PROBLEMS OF ONCOLOGY
CHEBOTAROV YE YU 1976
FEDOROVA Z P 1976
GITIS YE I 1976
RYABOVA E Z 1976
SERIZ YA I 1976

FACILITY UNKNOWN

GURVICH ALEKSANDR G	1944
KAMENSKAYA V V	1971
AGAVERDIYEV A SH	1972
MOSOLOV A N	1971

PRAGUE

INST FOR NUCLEAR SCIENCE

KUBAL J (DOCTOR)	1976

BUCHAREST

LABOR PROTECTION AND HYGIENE CENTER

BIBIS M (CHEMISTRY)	1977
DUMITRESCU IOAN FLORIN (CANDIDATE MEDICINE)	1977
DELEANU FL (CHEMISTRY)	1977

UNKNOWN LOCATION, ROMANIA

FACILITY UNKNOWN

GHEORGHITA FL (ASPIRANT ENGINEERING)	1977

HYPNOTISM/HYPNOPAEDIA

MOSCOW

INST OF NEUROLOGY

ROZHNOV VLADIMIR YEVGEN'YEVICH (PSYCH/PEDAGOGY)	1974

ALL-UNION TECHNICAL SOCIETY OF RADIO TECHNOLOGY AND COMMUNICATIONS

RAYKOV VLADIMIR A (CANDIDATE PSYCH/PEDAGOGY	1971

VNII HYDROLOGY AND ENGINEERING GEOLOGY

SOCHEVANOV NIKOLAY NIKOLAYEVICH (CANDIDATE GEO SCIENCES)	1976

VNII OF MINERAL RAW MATERIALS

SOCHEVANOV NIKOLAY NIKOLAYEVICH (CANDIDATE GEO SCIENCES)	1976

PEDAGOGICAL INST IMENI LENIN

ANGUSHEV GEORGIY (DOCTOR PSYCH/PEDAGOGY)	1973

INTERDEPARTMENTAL COMMISION FOR THE BIOPHYSICAL EFFECT

SOCHEVANOV NIKOLAY NIKOLAYOVICH (CANDIDATE GEO SCIENCES)	1976

FACILITY UNKNOWN

SAMOYLOV GENNADIY A (DOCTOR LAW PROFESSOR)	1973
MONIN ARKADIY I	1967
ZAKHAROV A K (MEDICINE)	1973

LENINGRAD

LENINGRAD STATE UNIVERSITY

BEKHTEREV V M (DOCTOR BIOLOGY ACADEMICIAN)	1927
BRAIN INST IMENI BEKHTEREVA	
SVYADOSHCH A M (DOCTOR MEDICINE PROFESSOR)	1974
FACILITY UNKNOWN	
BUL'PAVEL I (PSYCH/PEDAGOGY PROFESSOR)	1974
KHARKHOV	
FACILITY UNKNOWN	
DANILESKIY V YA	1924
ODESSA	
FACILITY UNKNOWN	
IVANOV VSEVOLD	1969
MOGILEVSKIY BORIS	1969
KARAGANDA	
KARAGANDA STATE UNIVERSITY	
SVYADOSHCH A M (DOCTOR MEDICINE PROFESSOR)	1974
DONETSK	
DONETSK MEDICAL INST	
PYATAK O A (PROFESSOR)	1977
LESHCHENKO G YA	1977
SINGACHENKO V V (PROFESSOR)	1977
UNKNOWN LOCATION, USSR	
FACILITY UNKNOWN	
PETROV P	1974
SLOBODYANIK A P	1966
VISH I M (PSYCH/PEDAGOGY)	1974
PRAGUE	
FACILITY UNKNOWN	
MASOPUST VLADIMIR (ASPIRANT)	1971
REJDAK ZDENEK (CANDIDATE SOCIOLOGY)	1975
VALASEK E (ENGINEERING)	1977
TICHA A (CANDIDATE MEDICINE)	1977
WARSAW	
POLISH CYBERNETIC ASSOCIATION	
BERNAT ANNA (CHEMISTRY)	1977
STEFANSKIY LECH EMFAZY	1977

SOFIA

INST OF SUGGESTOLOGY
LOZANOV GEORGIY K (DOCTOR MEDICINE PROFESSOR) 1976

UNKNOWN LOCAITON, BULGARIA
FACILITY UNKNOWN
ANGUSHEV GEORGIY (DOCTOR PSYCH/PEDAGOGY) 1973

UNKNOWN LOCATION, ROMANIA

FACILITY UNKNOWN
SZABO LASLO (CANDIDATE MEDICINE) 1975

ACUPUNCTURE

MOSCOW

ALL-UNION TECHNICAL SOCIETY OF RADIO TECHNOLOGY AND COMMUNICATIONS
PODSHIBYAKIN A K (DOCTOR PHYSIOLOGY) 1965
NII OF INTROSCOPY
ADAMENKO VIKTOR GRIGOR'YEVICH (CANDIDATE BIO-PHYSICS) 1977
MOSCOW INST OF RADIO PHYSICS AND BIOENERGETICS
ADAMENKO VIKTOR GRIGOR'YEVICH (CANDIDATE BIO-PHYSICS) 1977
CENTRAL NII OF REFLEXOTHERAPY
DURINYAN R A (DOCTOR MEDICINE) 1977
VNII OF VETERINARY SANITATION
PYATKIN YEVGENIY MIKHAILOVICH (CANDIDATE VETERINARY MED) 1975

LENINGRAD

LENINGRAD STATE UNIVERSITY
GEYKIN NIKHAIL K (CANDIDATE MEDICINE PROFESSOR) 1968
MIKHALEVSKIY V I (ENGINEERING) 1969

KIEV

INST OF CLINICAL PHYSIOLOGY
PODSHIBYAKIN A K (DOCTOR PHYSIOLOGY) 1965
KIEV INST FOR ADVANCED TRAINING OF PHYSICIANS
BASMANOV S N 1977
TRESCHINSKIY A I (MEDICINE PROFESSOR) 1977

KHARKHOV

KHARKOV MEDICAL INST

DUBENKO YE G (CANDIDATE MEDICINE) 1977

CHELYABINSK

FACILITY UNKNOWN
CHEREDINOV M N 1973
SHAROV B B 1973
LYSAK D S 1973
SAVINA L V 1973

TALINN

TALINN POLITECHNICAL INST
HALDRE HELDUR HANS (BIO-PHYSICS) 1977
FACILITY UNKNOWN
TIIK HEINO (CANDIDATE MEDICINE) 1975

UNKNOWN LOCATION USSR

MAIN ADMINISTRATION OF THE INTRODUCTION OF CHEMISTRY INTO AGRICULTURE
UNKNOWN RESEARCHERS 1976
FACILITY UNKNOWN
KHRUSHCHEV V A 1973
MIGACHEVA A F 1969
PLAKHOTIN M V (VETERINARY MED) 1966

BIORHYTHMS

MOSCOW

MOSCOW STATE UNIVERSITY
CHERNYSHEV V B (CANDIDATE ENTOMOLOGY) 1974
INST OF MEDICAL-BIOLOGICAL PROBLEMS
AGADZHANYAN NIKOLAY ALEKSANDROVICH (DOCTOR MEDICINE PROFESSOR) 1975
VNII HYDROLOGY AND ENGINEERING GEOLOGY
MATVEYEV VALERIY SERGEYEVICH (CANDIDATE GEO SCIENCES) 1976

LENINGRAD

LENINGRAD STATE UNIVERSITY
SERGEYEV GENNADIY ALEKSANDROVICH (DOCTOR PHYS/MATH) 1977

ASHKHABAD

TURKMEN REPUBLIC NI STATION FOR PLANT PROTECTION
CHERNYSHEV V B (CANDIDATE ENTOMOLOGY)

UNKNOWN LOCATION, USSR
INST OF PHYSIOLOGY AND EXPERIMENTAL PATHOLOGY OF HIGH MOUNTAIN AREAS
UNKNOWN RESEARCHERS 1975
FACILITY UNKNOWN
ISABAYEVA V A 1975

UNKNOWN LOCATION, CZECHOSLOVAKIA

FACILITY UNKNOWN
YUNASH YE 1972

GRAVITY EFFECTS/BIOGRAVITY

MOSCOW
INST OF EARTH SCIENCES
DUBROV ALEKSANDR P (DOCTOR BIO-PHYSICS) 1977

UNKNOWN LOCATION, USSR
FACILITY UNKNOWN
BUNIN V A (PHYS/MATH) 1973
TRINCHER KARL SIGMUNDOVICH (CANDIDATE BIO-PHYSICS) 1973

ANNEX C

JOURNALISTS WHO HAVE REPORTED ON PARAPHYSICS (U)

(U) One of the problems of doing research into the personalities involved in paraphysics is recognizing cases where the author of an article on the field is not himself a researcher. The problem is particularly acute in a field like paraphysics, in which a large number of articles appear in the popular press. The following persons have written articles on paraphysics research, but appear not to be researchers themselves:

JOURNALIST	
Popovkin, Viktor Engineering	1968
Guberman, I.	1968
Kongro, Anatoliy	1972
Moralevich, Yu.	1968
Bashkirova, G.	1969
Simurov, A.	1969
Voskresenskaya, N.	1966
Tobolev, V.	1966
Volodin, B.	1969

ANNEX D

ANTI-PARAPHYSICS WRITERS

MOSCOW

MOSCOW STATE UNIVERSITY	
KOLMOGOROV A N (DOCTOR PHYS/MATH ACADEMICIAN)	1962
VORONIN LEONID GRIGOR'YEVICH (DOCTOR PSYCH/PEDAGOGY ACADEMICIAN)	1976
ALL-UNION TECHNICAL SOCIETY OF RADIO TECHNOLOGY AND COMMUNICATIONS	
KLYATSKIN ISAY GERTOSOVICH (DOCTOR ENGINEERING PROFESSOR)	
MOSCOW NII OF PSYCHIATRY	
SNEZHNEVSKIY A V (DOCTOR PSYCH/PEDAGOGY ACADEMICIAN)	1967
VNII HYDROLOGY AND ENGINEERING GEOLOGY	
MATVEYEV V S (PSYCH/PEDAGOGY)	1969

LENINGRAD

INST OF EXPERIMENTAL MEDICINE	
BIRYUKOV D A (DOCTOR PHYSIOLOGY ACADEMICIAN)	1969
BEKHTEREVA N P (DOCTOR PHYSIOLOGY ACADEMICIAN)	1975
BRAIN INST IMENI BEKHTEREVA	
BLEYKHER V M	1972
FIRST LENINGRAD MEDICAL INST IMENI PAVLOVA	
LEBEDEV B A (CANDIDATE PSYCH/PEDAGOGY)	1964
FACILITY UNKNOWN	
L'VOV VLADIMIR	1973

PUSHCHINO

INST OF BIOLOGICAL PHYSICS	
VORONIN LEONID GRIGOR'YEVICH (DOCTOR PSYCH/PEDAGOGY ACADEMICIAN)	1976

UNKNOWN LOCATION, USSR

FACILITY UNKNOWN	
PODACHIN V (DOCTOR MEDICINE)	1973
SHAKHNOVICH M I (CANDIDATE PROFESSOR)	1969
KRAYZMER L P (PHYS/MATH)	1973
DZHAVADYAN N (CANDIDATE PROFESSOR)	1961
KITAYGORODSKIY ALEKSANDR I (DOCTOR PHYS/MATH PROFESSOR)	1967
OPARIN A P (DOCTOR ACADEMICIAN)	1969
VOLODIN B	1969

APPENDIX II

BIOGRAPHICAL NOTES—SELECTED PERSONALITIES (U)

(U) Certain persons have occupied places in the recent history of paraphysics in the Warsaw Pact countries that demand they be given special attention. This appendix outlines the professional credentials and institutional affiliations of some of these persons, as an aid to the reader in assigning the appropriate significance to them.

(U) Those persons selected have been chosen for a variety of reasons. Four (Leont'yev, Lomov, Luriya, and Zinchenko) are coauthors of an article in *Voprosy Filosofii* which lends the weight of their prestige to certain forms of paraphysics research. Two (Kogan and Sergeyev) are included because of the highly significant nature of their paraphysics research and the influence they have had on other researchers. Two (Naumov and Rejdak) are included because of their high visibility in the paraphysics community, although in both cases their research is of questionable significance. Finally, Petukhov is now best known as the scientist who was involved in the incident with Los Angeles Time reporter Robert Toth in June 1977.

(U) In the Soviet Union, the Doctor (Doktor) degree is a post-Ph.D. degree given to mature scientists who have made substantial contributions to their field. Only about one tenth of all Ph.D. scientists in the Soviet Union are granted this degree, and it is an excellent indicator of the prestige of a scientist. All of the Soviet scientists listed in this appendix (except Naumov) possess this degree.

1. Ippolit Moyseyevich Kogan (U)

(U) Doctor of Technical Sciences (Radiotechnology)
Professor, Moscow Higher Technical School (MVTU) imeni Bauman, Department of Radiotechnology
Nonstaff editor at All-Union Institute of Scientific and Technical Information, Department of Automation and Radiotechnology
Director, Bioinformation Section, All-Union Technical Society of Radio Technology and Communications imeni A. S. Popov since its founding in 1965
Numerous technical publications in radio theory and radar from 1958 to 1973

2. Aleksev Nikolayevich Leont'yev (U)

(U) Born 1903, Moscow
Doctor of Pedagogical Sciences (Psychology)
Member, Academy of Pedagogical Sciences, RSFSR
Member, Academy of Pedagogical Sciences, USSR
Member, Communist Party of the USSR since 1948
Professor, Moscow State University, Faculty of the Philosophy of Psychology
Senior Scientific Staff Member, Institute of Psychology, Academy of Pedagogical Sciences, Moscow
Lenin Prize Winner
Order of Lenin Winner
Numerous technical publications in brain functioning and engineering psychology since 1928

3. **Boris Fedorovich Lomov (U)**

(U) Doctor of Pedagogical Sciences (Psychology)
Corresponding Member, Academy of Pedagogical Sciences, USSR
Member, Academy of Psychological Sciences, USSR
Head, Department of Engineering Psychology and Biotechnology, Leningrad State University until 1972
Director, Institute of Psychology, Academy of Sciences, USSR since its founding in 1972
Numerous technical papers on thought processes and engineering psychology since at least 1959

4. **Aleksandr Romanovich Luriya (U)**

(U) Born 1902, Kazan
Doctor of Pedagogical Sciences (Psychology)
Professor, Moscow State University, Chair of Neuropsychology, since 1945
Member, Academy of Pedagogical Sciences, RSFSR
Member, Academy of Pedagogical Sciences, USSR
International Corresponding Member, National Academy of Sciences, USA
Order of Lenin Winner
Numerous books and technical articles on the physiological activity of the brain since 1927

5. **Eduard K. Naumov (U)**

(U) Expelled from the Moscow Institute of Physical Culture for nonachievement; does not possess a legitimate academic degree
Worked with L. L. Vasil'yev from 1959 to 1962
President of a parapsychology group attached to the Technical Section, Soviet Societies of Friendship and Cultural Relations with Foreign Cultures, 1962-1968
Deputy Director, Bioinformation Section, All-Union Technical Society of Radio Technology and Communications imeni A. S. Popov, 1965-1966
Head, Section of Technical Parapsychology attached to the All-Union Evening Institute of Machinebuilding, 1966-1974
Arrested and jailed late 1974, released 1976
Laboratory technician, Central Control Institute for Medical-Biological Preparations imeni Tarasevich, Moscow, 1976-1977
All positions above other than the last were nonpaying. For several years made his living entirely from proceeds gleaned from giving parapsychology lectures in the USSR

6. Valeriy G. Petukhov (U)

(U) Doctor of Biological Sciences (1974)
Chief, Laboratory for Studying Biochemical and Immunological Methods of Standardization and Control of Medical-Biological Preparations, Central Control Institute for Medical-Biological Preparations imeni Tarasevich (E. K. Naumov's supervisor)
Numerous publications in the field of microbiology and bioluminescence from 1965. Dissertation Topic: "Research on Bacteria in a Standard Environment and in Low Temperatures and Lyophilozation by Luminescent Methods"

7. Zdenek Rejdak (U)

(U) Born 1934
Graduated from Charles University, Prague, with degree in literature
Doctor (Social Psychology and Philosophy), 1967
President, International Association for Psychotronic Research

8. Gennadiy Aleksandrovich Sergeyev (U)

(U) Doctor of Technical Sciences (Mathematics/Biophysics)
Senior Scientific Staff Member, Institute of Physiology imeni A. A. Ukhtomskiy, Leningrad
Chief, Technical Parapsychology Section, All-Union Precision Instruments Society imeni Vavilov
Chairman, Committee for Atmospheric Environmental Protection of the Leningrad Oblast' Council of Scientific and Technical Societies
Numerous technical publications in electronic data processing techniques and noncontact remote sensing devices

9. Vladimir Petrovich Zinchenko (U)

(U) Doctor of Pedagogical Sciences (Psychology) (1966)
Professor, Moscow State University, Faculty of Psychology, Section on Industrial Psychology and Labor Factors
Laboratory Chief, All-Union Scientific Research Institute of Technical Aesthetics
Member, Academy of Pedagogical Sciences, USSR
Member, Academy of Psychological Sciences, USSR
Numerous publications in the field of engineering psychology and perceptual processes. Dissertation Topic: "Perception and Action"

APPENDIX III

METHODOLOGICAL AND DATA CONSIDERATIONS (U)

(U) Although this study has been careful to indicate the appropriate qualifiers for data or conclusions presented, the controversial nature of the subject matter makes it desirable to expand on methodological considerations which affect the conclusions. In many cases, data exist to support viewpoints different from those endorsed by this study. The analysts have had to make informed choices on the basis of the best information available. Although it is believed that the judgments made reflect the best possible assessment of currently available data, it should be borne in mind that other informed judgments are both possible and defensible on the basis of current knowledge. It is the purpose of this appendix to provide the interested reader with some additional material upon which to make an assessment of the current state of knowledge on paraphysics research in the Warsaw Pact countries.

(U) The vast majority (80-90%) of all material used in the preparation of this study comes from unclassified, open source documents. Paraphysics researchers, like scientists in other fields, are anxious to publish their research results and avidly follow the popular and professional press for reports on the work of others. Accordingly, there is a wealth of documentation available in the journals. Certainly there are a number of problems with such data. There is, for instance, no journal in the Soviet Union which is devoted to any aspect of paraphysics research (or to paraphysics as a whole). Consequently, paraphysicists must seek publication through either professional journals normally devoted to other aspects of the sciences or through the popular press. Each such course has its rewards and dangers.

(U) Publication in professional journals, while preferable from a scientific standpoint, is not always easy to achieve. No paraphysics subject fits neatly into the charter of any of the established sciences, and it is only with some terminological juggling that inclusion of a paraphysics paper can be justified in a journal nominally devoted to another science. Such compromises can be achieved, of course (I. M. Kogan's information-theoretic approaches to telepathy, as carried in *Radiotekhnika*, being an excellent example). However, each such case must at the outset face a challenge to its relevance to the aims of the journal, in addition to the usual tests of scientific significance. Given the opposition to paraphysics which still exists within much of the Soviet scientific establishment, there is an understandable tendency among editors to avoid controversy by arguing that a paraphysics paper might more easily fit within the charter of someone else's journal.

(U) There seem to be no such constraints with respect to the popular press. Paraphysics touches on areas that are of high interest to the public. At least during those periods for which there is no severe repression of such articles by the government (which is most of the post-1959 period), the popular press seems quite willing to report on paraphysics activities. However, such access carries large dangers with it. For even the most responsible of popular journals, any article must be written so as to be of interest to a wide, general readership. This requirement generally mandates exclusion of methodological details and qualification to the results which are of crucial importance in a scientific evaluation of the research. And, as noted earlier in this study, by no means all the journalists in the Soviet Union can avoid the temptation to exaggerate and sensationalize the claims or results of the researcher; many have been known to imply that there are associations to popular mythology in some research results. This cannot but be full of danger for the reputation and career of any professional. Just as the *National Enquirer* is not normally the publication medium of choice for serious scientists in the US, so also the more sensational journals to which they have the easiest access are not normally sought out by most serious paraphysics scientists in the Warsaw Pact.

[redacted]

(U) As a result of the above, much of the research in the Soviet Union and elsewhere in the Warsaw Pact is not reported in detail, or is reported in a manner which makes scientific analysis of its merit difficult. It is also probable that some research in paraphysics is undertaken at government institutes under military or KGB sponsorship; clearly little, if any, of that research would normally be reported in the open press.

(U) Even with the above problems in exploitation of the open literature, there are substantial amounts of knowledge that can be achieved. Generally, the research strategy that has been used within this field has been along the lines of a search for names associated with paraphysics topics in both the popular and professional press. As a starting point, collections of paraphysics titles were used. The most productive of such sources is the *Bibliography on Parapsychology (Psychoenergetics) and Related Subjects*, by E. K. Naumov and L. V. Vilenskaya.* With this beginning, original copies of the more interesting documents were ordered, and other papers by the same authors were located. Using coauthor associations and the bibliographies normally attached to the technical papers, it was possible both to expand the number of persons who were known to be writing in the field and to discover the institutional affiliation, research area, and academic background of many of the persons so identified.

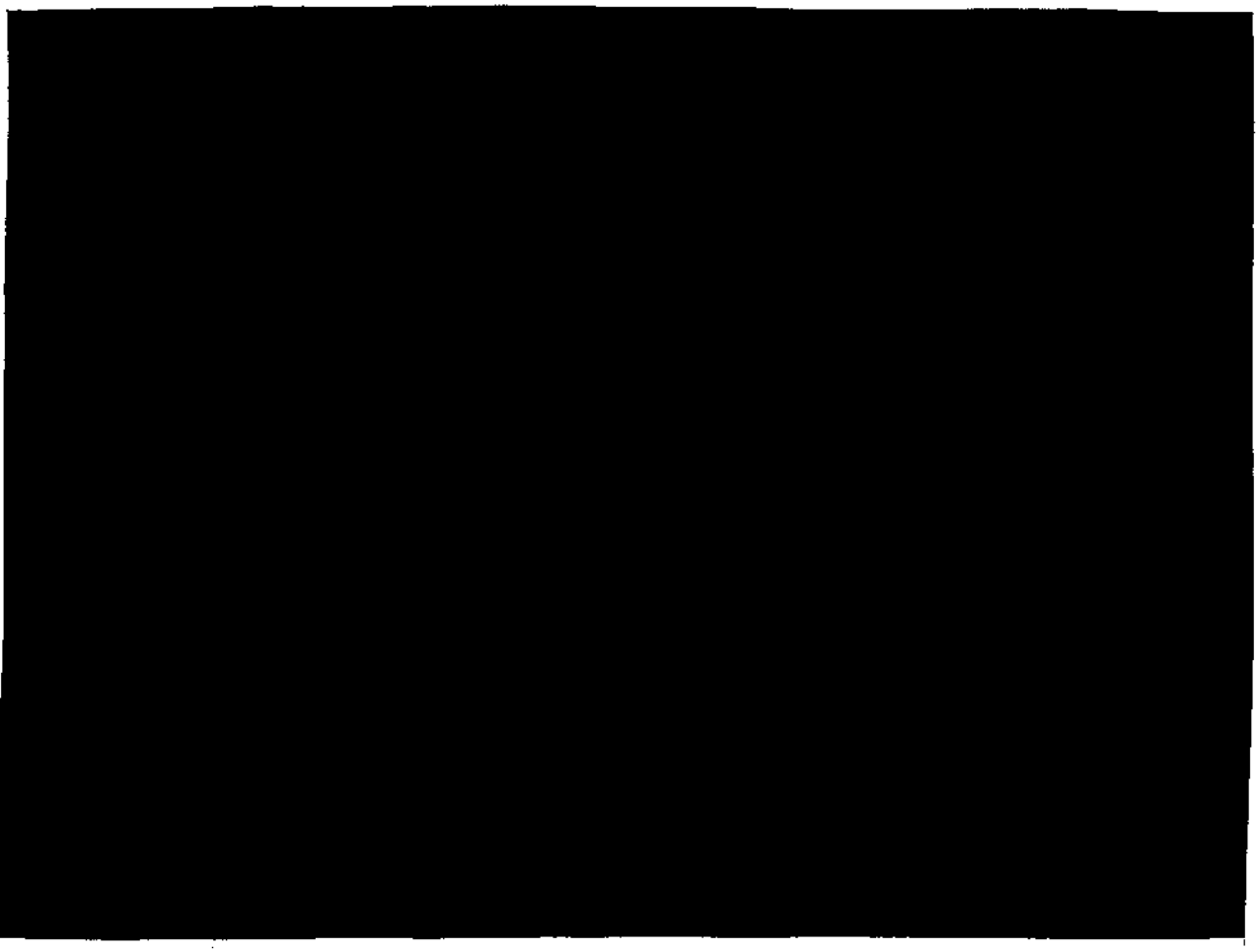
(U) The above strategy has identified hundreds of papers which relate directly to paraphysics and hundreds of other papers in the more established sciences by the same authors. The identification and acquisition process is a lengthy one, compounded by the requirement to translate the more interesting papers received for content evaluation. The process is further lengthened by the fact that most papers, when received, give leads to additional works. Those papers available for full review by the analysts amounted to only about 30% of the known total as of the information cutoff date for this study, and it can reasonably be anticipated that further research will uncover a substantial addition to the known number of papers available in the area.

(U) Obviously, there is considerable latitude for improvement in the body of knowledge available on Warsaw Pact paraphysics research. In many cases, all that is presently known about a researcher is the name and the date and title of a publication. While this gives some valuable information and allows a starting point to search for more data, it clearly leaves a lot to be desired as a basis for evaluation of the state-of-the-art in paraphysics research. Subsequent editions of this study should be in a much improved position to make a complete evaluation.

[redacted]

*(U) JPRS 55557, 28 March 1972. Bibliography compiled in 1971 by the authors.

[redacted]



(U) Depending upon the assumptions and analytic techniques used, and how judgments are made about the probable credibility of certain parts of the available data base, it is possible to arrive at conclusions which are somewhat different from those presented in this study. Such conclusions can be legitimately based upon the current body of knowledge and not be directly refutable. Nonetheless, this study has attempted to bring knowledge of Soviet R&D practices, the political and cultural environment of the Warsaw Pact countries and of Western state-of-the-art to bear upon the current data base on paraphysics research. On that basis, the conclusions herein seem the best current balance of data and judgments about some paraphysics research activities in the Warsaw Pact countries.

[redacted]

[redacted]

TABLE V

COMPARISON OF TWO INTERVIEWS WITH THE SAME SOURCE (U)

FEBRUARY 1975	[redacted]
In 1965 . . . was created so-called "Section No. 8."	
In 1968 he was hired as a researcher by Perow for his "Section 8"	
. . . and worked in that laboratory for almost four years, 1968 to 1972.	
All together . . . "Section 8" was employing about 150 top scientists, not counting the technical staff.	
"Section 8" had a very big budget (approx. 2 million rubles per year.) . . . as a matter of fact, the institute was and still is equipped rather poorly.	

Sources: [redacted]

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[redacted]

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9. Kolodnyy, L., "Wireless Telegraphy No. 2," *Moskovskaya Pravda*, 9 April 1967, p 4 (col 4-7).

10. Goldburg, I. M., "The Question of the Development of Tactile Sensitivity," *Voprosy Psikhologii*, No. 1, 1963.

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7. Ibid., p 82.

8. Bakirov, op. cit., p 91.

9. Sochevanov, N. N., and Matveyev, V. S., "Electromagnetic Fields as Origin of the Biophysical Effect," *International Journal of Paraphysics*, Vol 10, No. 5 and 6, pp 116, 117.

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16. Sochevanov, N. N., and Matveyev, V. S., "The Biophysical Method," op. cit.

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27. Bradna; op. cit., p 231.

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35. Bradna, Jiri, "Pursuing the Secret of the Dowsing Rod," *First Psychotronic Conf.*, pp 231-232.

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41. Sergeyev, op. cit.

42. Ibid., p 5.

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